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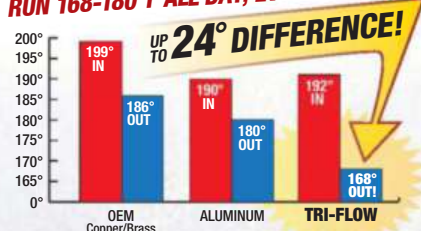


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ON THE COVER:

Brandan Gillogly photographed Tom McIntyre's 1963 Sting Ray shortly before it was reunited with a 427 Mystery Motor. Wes Allison shot the car in 110-degree heat at Willow Springs once the Mystery Motor was back in the car.



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Duntov, Corvettes, and Hot Rodding



It's difficult to imagine a hot rod world without Chevy's small- and big-block engines. But there was a time neither played a part. Fords dominated hot rodding in the 1950s, and the flathead was the V8 of choice for everyone looking for cheap speed. How did Chevy reverse all of that?

It began with a three-page letter dated December 16, 1953, and sent to Maurice Olley, Chevrolet Motor Division's director of research and development. The letter was written by a recently hired assistant staff engineer—a Belgian-born and German-educated man named Zora Arkus-Duntov. At 43, Duntov was new to Chevy, but not to hot rodding.

In his 1953 memo "Thoughts Pertaining to Youth, Hot Rodders, and Chevrolet," the "Duntov Letter," as it's better known, leveraged the power of hot rodding (he used the term nine times) in hopes to do for Chevy what the flatheads and lakebeds had done for Ford.

Duntov's letter began with outlining opportunities the hot rod media offered. "The hot rod movement," he wrote, "and interest in things connected with hop-up and speed is still growing. As an indication: the publications devoted to hot rodding and hop-upping, of which some half-dozen have a very large circulation and are distributed nationally, did not exist

some 6 years ago." Duntov went on to write, "a young man buying a magazine for the first time immediately becomes introduced to Ford." And that, "as they progress in age and income, they graduate from jalopies to second hand Fords, then to new Fords."

How did Duntov propose Chevy counter Ford's momentum? It would have to support hot rodders and fuel the industry with speed parts as the "slide rule potential of our [1955 small-block] is extremely high but to let things run their natural course will put us one year behind and then not too many will pick Chevrolet for development." Enter Duntov's plan to develop speed parts for hot rodders: "One factor which can largely overcome this handicap would be the availability of ready engineered parts for higher output."

But how could Chevy justify such parts for hot rodders? It would use the Corvette. "If the special parts are carried as [regular production options] items for the Corvette, they undoubtedly will be recognized by the hot rodders as the very parts they were looking for to hop up the Chevy," surmised Duntov. Based on the number of Corvette-bre parts HOT ROD has featured during the last 60 years, I'd say Duntov's plan worked perfectly.

►HOTROD.COM/David-Kennedy

[What if the real reason the 1955 Corvette got the small-block Chevy was just so hot rodders could get the speed parts they needed to beat flat-head Fords? Thanks, Zora.



GM Archives

IN MY OPINION

Great Advice
"If you're gonna play with rattlesnakes, you better know what rattlesnakes do." Smokey Yunick

Duntov and HOT ROD
I've asked our subscription department if we have any record of Zora Arkus-Duntov subscribing to HOT ROD. I've been told that if we do it's on a 3x5-inch notecard amongst thousands of other such files in our Florida office. I promise I'll find that notecard one day.

Sacred Geometry
For 60 years the small-block Chevy engines have used the same basic six-bolt bellhousing pattern that was born with the first 265ci V8. The big-blocks used this pattern too. When the LS1 debuted for 1997, one of the bolts was omitted, and with the 2014 LT1 the top bolt was nudged to the passenger side to clear the direct-injection pump's drive mechanism. Which meant that after the 8.1L went out of production, it left GM with only one remaining engine using the original Chevy bellhousing pattern from 1955. Can you guess what it is? The 6.6L Duramax diesel.

►HOTROD.COM/Brandon-Gillogly



Are there any three words cooler than "custom-ground cam?" OK, so there's "Shelby Cobra Daytona," "Zora Arkus-Duntov," "Mickey Thompson Challenger," and "Hemi 'Cuda Convertible." I just really wanted to tell everyone that I'm getting a custom-ground cam for my Pontiac.

►HOTROD.COM/Elana-Scherr



Brandon and I have been using the Periscope app to live-broadcast our morning drive to the office. We're not sure if it entertains the viewers, but it sure makes the commute more fun for us!

►HOTROD.COM/Thom-Taylor



Recently the Chrysler Dealer Association had its yearly soirée, with rumors swirling about Alfa-based Barracudas, 1,000hp Hellcats, and a new 2017 Charger with better looks than the 1999 Charger showcar—I must be dreaming.

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Pontiac Wins the 1963 NASCAR Challenge Cup

In the early 1960s, Pontiac was smoking the competition in drag racing with its Super Duty 421 Pontiacs. For 1963, it built 12 lightweight Super Duty Tempests, six station wagons, and six LeMans coupes to assault the strips—which they all did, with the exception of one coupe. It was plucked for the first ever NASCAR Challenge Cup in February 1963, scheduled two weeks before the Daytona 500. This was to be a 250-mile race at the Daytona oval for GT race cars with engines smaller than 427.2 ci displacement. The purse was \$20,000 for the winner. HOT ROD's feature story on the Mickey

Thompson Z06 Corvette running the first-ever Mark II big-block Mystery Motor was built for this race, which you can read about starting on page 54.

Pontiac contracted Ray Nichols Engineering in Merrillville, Illinois, to beef up the coupe to withstand the 250-mile pounding. Nichols upgraded the suspension, added a rollcage, oil coolers, and a 500hp, dual-quad, 421ci Super Duty engine. It also rigged two two-speed "TempesTorque" Powerglide transmissions back-to-back, adapting them to the stock LeMans rear-mounted transaxle.

Paul Goldsmith put the Pontiac on the pole. Running in the rain against Ferraris, a slew of Stingrays, Jags, and Porsches, Goldsmith leapt to the front of the pack and never looked back—lapping the European exotics, including a Ferrari GTO he lapped eight times.

From here, it was entered in the Continental road race the following week also at Daytona, but didn't finish. Soon, Mercedes purchased it for competitive reconnaissance, and it was never seen again.

► HOTROD.COM/Thom-Taylor

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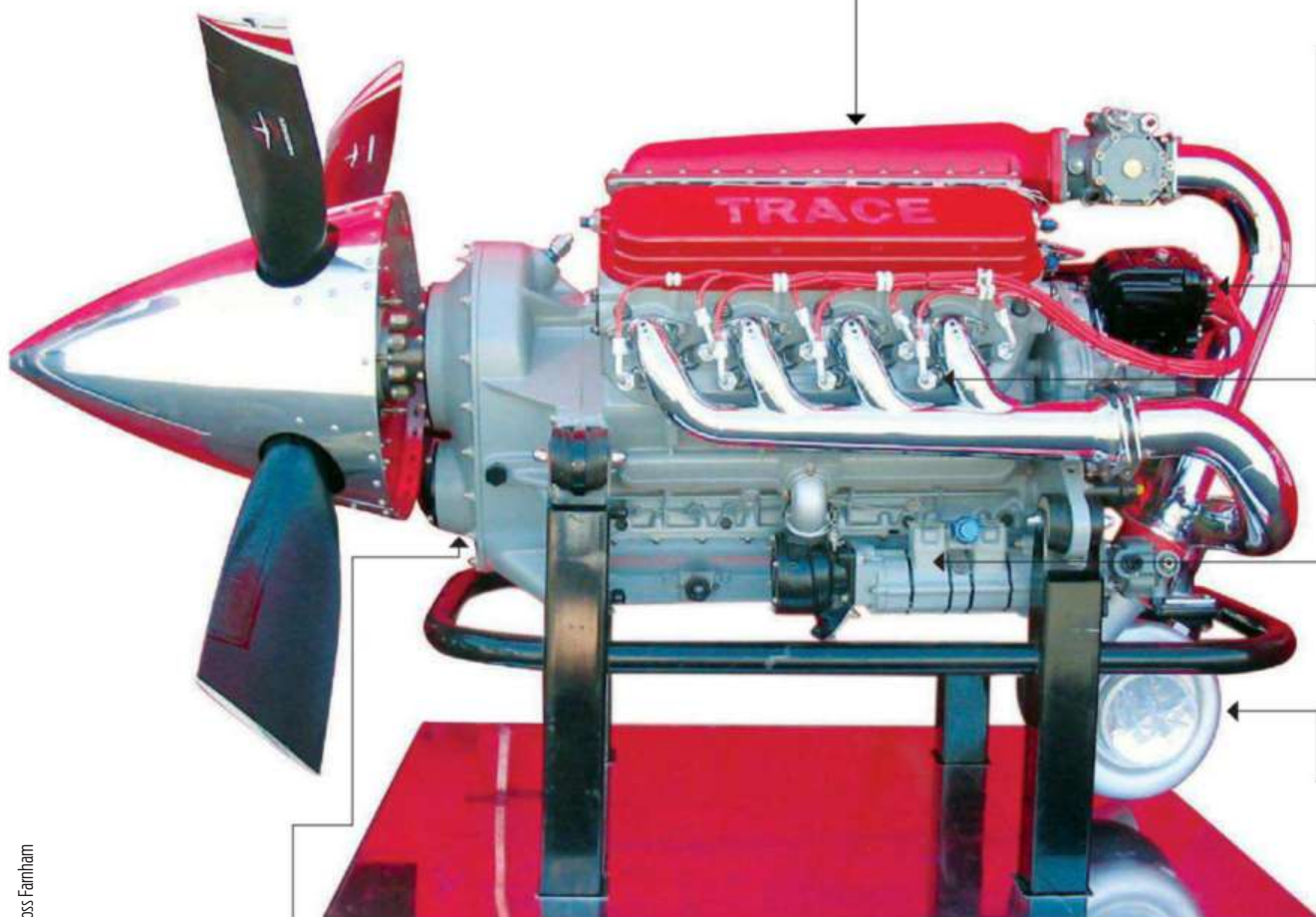
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Ross Farnham

As car guys, we drool when we encounter alluring paint schemes, fancy interiors, and bitchin' wheels, but it's always what's hiding under the hood that evokes our deepest emotions. As hot rodders, we're impressed by all engines and particularly fascinated by V8s in innovative builds. But what about a big-block-propelled aircraft? Well, that takes engine swaps to a whole new level—literally.

For more than a century, aerospace engineers have been designing and fabricating machines revolutionizing the

way hot rodders utilize parts and equipment. Since the first successful aircraft in 1903 (by two brothers working in a bicycle shop), to the first flight of a turbine engine in 1939, aviation engineering has sought high-powered yet reliable engines—goals that coincide with what gearheads attempt to accomplish with hot rod projects every day. Enter the Trace Engines (TraceEngines.com) OE600 Chevy big-block-based airplane engine, an all-aluminum, 495ci V8 that's been significantly modified to propel an aircraft.

Originally designed by

Richard Macoon and his brother, Grant, a big-block Chevy Can-Am race-car engine for aviation use in the 1970s. The "Thunder Engine" was a twin-turbo powerplant cast using Reynolds' 390 aluminum alloy. But it wasn't until 1994 that Orenda Aerospace (now known as Magellan Aerospace) developed the engine into the OE600 and obtained a U.S. FAA certification for it.

Despite its belated ascendancy, the V8 concept has finally taken flight with its new owner: Trace Engines of Midland, Texas. The 8.1L V8

promises to produce 600 horses at takeoff and 500 during its continuous flight, at elevations up to 28,000 feet. These 740-pound engines are liquid-cooled and fuel-injected, bored to 4.433 inches with a stroke of 4.000 inches and a compression ratio of 8:1. A single Hartzell Engine Technologies turbocharger feeds the engine to maintain power at altitude. In addition to the OE600, Trace Engines has manufactured a more powerful version of the engine called the TE750A, which delivers 750 hp.

➔ **Albert Hernandez**

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► Each cylinder holds two spark plugs.

► A dry-sump lubrication system is equipped to store and supply oil to the engine and propeller.

► A hefty Hartzell Engine Technologies turbocharger was approved for this application. The turbine housing A/R is 1.32 and the compressor housing is 0.81. These turbos were originally designed by Garrett AiResearch Industrial Division for large, over-the-road trucks and construction equipment.

► A gearbox is incorporated into the engine to drive the propeller.

OTHER USES OF THE BIG-BLOCK CHEVY

The Mercury Mercruiser 8.2L, by **Mercury Marine**, was designed specifically for marine use with 430 hp and a compression ratio of 8.75:1.

Buck's Engines uses big-block-Chevy-based motors for irrigation, gas compression, oil production, industrial equipment, power generation, mobile equipment, wind machines, and re-power applications.

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Readers' Projects

Want to share your car with the whole world? Send photos and info to HOTROD@HotRod.com.



Stewart Harris // Delta, BC, Canada

This is a two-owner 1966 Corvette with the original 425hp 427 Mk IV Rat motor and a M21 four-speed. It rides on Boss 338 wheels, 17x8s (front) and 18x9.5 (rear).



Gerrod Winkle // Sacramento, California

Here's the 347ci small-block Ford in Gerrod's 1967 Mustang. It runs on E85 with a 120hp shot of nitrous, backed by a TCI Auto C4 three-speed with 4,000-rpm stall converter.

2016 Viper ACR Dodge Is Building Hot Rods in Snake Skin



© Courtesy of Chrysler

The Dodge Viper was once an unruly beast, tamed only by the most dedicated of drivers. There were complaints: “It’s too hard to drive!” cried the masses, and the engineers went in and widened the front and rear track-width and tires, wrapped the interiors in leather and faux-suede, and offered the tamed snake in all the colors of the rainbow. “It’s lost its edge!” the people said.

Frustrated, the SRT engineers went into the parts room and pulled out the wings deemed too high, the splitters too low, the diffusers too complex. “We shall put it all on, and then they can tune it themselves,” SRT said, and thus was born the 2016 Dodge Viper ACR (American Club Racer).

At least, that’s how we imagine it happened. Whatever the backstory, the result is that the Viper ACR is back for the first time since the

second-generation ACR set the production-car lap record at Nürburgring in 2011, and it is a ton of fun and an (almost literal) ton of downforce.

Just in case you aren’t up to snuff on your Viper news, earlier in 2015, SRT started offering a custom build program for Viper, the Viper GTC. For \$10,000 more than the price of a base SRT (MSRP \$84,995), customers can pick from 8,000 different exterior color and graphic combos, plus all kinds of leather, Alcantara, and carbon-fiber interior bits. For \$118,000, you can get the ACR and rule open track days from this day forth. The engine is still the booming, 645hp V10 backed by the Tremec six-speed. Don’t drive stick? Better learn—the Viper remains one of very few American cars only available with triple pedals. And you’re going to want to be able

to drive this new one, because as we just found out on the 4.1-mile Grand Course at Virginia International Raceway (VIR), the new ACR is unflappable in the hands of rookies, and positively mind blowing with an expert behind the wheel.

SUPERBIRD 2.0?

The snake’s secret isn’t subtle. It’s all about aero. The ACR, especially with the Extreme Aero package, is practically a Superbird 2.0, with a massive rear wing, removable vents in the front fenders, and a long nose extension—this time in the form of a carbon splitter. Unlike the cone-nosed Plymouth, the ACR can be made slightly less prone to front-end damage by removing the splitter for street use. It bolts on with four struts and 14 fasteners. The wing is a more permanent fixture, but you don’t





HIDING THE PROTOTYPE

"It's not like putting camo on it would do much," SRT Head of Engineering Russ Ruedisueli told us. "Finally, we got some racing meatballs, a bunch of aftermarket stickers, and a plain trailer and we stickered up the car and towed it behind an unmarked Ram, and nobody ever even looked at it on the track. It just looked like a race car."

SRT worked with Kumho to develop a rubber compound and tread pattern just for the ACR's 295/25R 19-inch front and 355/30R 19-inch rear Ecsta V720 tires that perform on track like a slick, but promise street durability like a 200 treadwear. The ACR offers the most contact patch of any production car, and behind those big rollers are Dodge's first carbon-ceramic brakes.

On track the 3,392-pound Viper positively ate up VIR's 23 turns, stuck down and capable of being driven at speeds much faster than we could learn the course. Even with several "right, no wait, left" moments, the ACR did little more than wiggle its rear in impatience. When it was wide open, it boomed in satisfaction, the placement of the side-exit exhaust acoustically perfect for entrance in an open

window and helmeted eardrum.

Sure, you lose a little top speed with all the downforce—about 27 mph from the magic 200 number—but believe us, you'll make it up on the corners. Plus, this is a customizable Viper. There are already aftermarket engine upgrades, so you can find your missing miles per hour if you need them.

For those of you out there with a track itch and the scratch to scratch it, the Viper ACR will deliver on all it promises. Better yet, based on what we saw at the track in 90-degree weather, not only will it run one fast lap but it will run all day without derating or throwing codes. Hot lap all you want, friends, the Viper ACR likes it. Everyone not in an ACR better clear shelf room for Second Place trophies.

➤ HOTROD.COM/Elana-Scherr

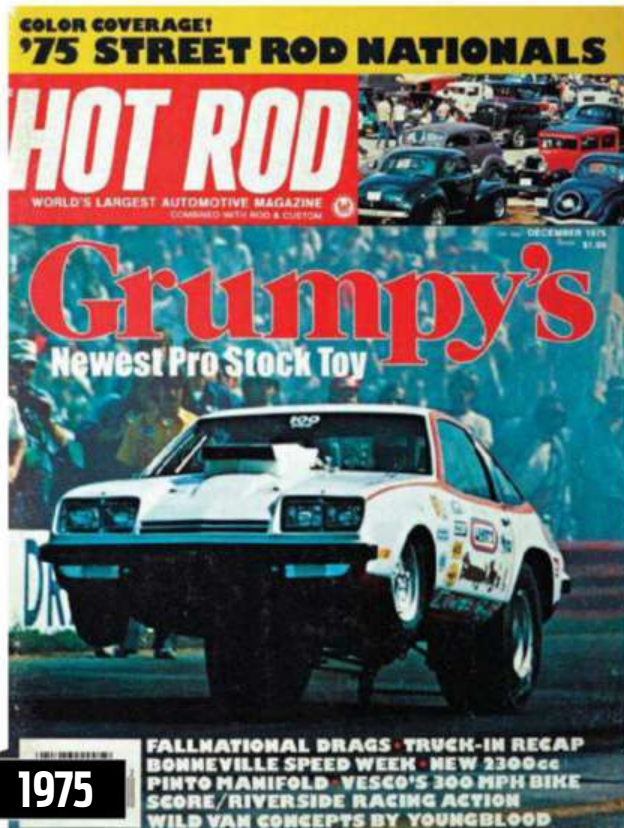
buy a Viper to go unnoticed. If someone asks in the gas station parking lot, yes, it's adjustable and, yes, it makes a difference. SRT did more than 600 simulator runs and numerous hours of wind-tunnel testing before deciding on the X-wing—so named both for its shape and because the designers are *Star Wars* nerds.

CARBON, COILOVERS, AND ANOTHER DODGE FIRST

Beneath that body bristling with dive planes and hood vents are replaceable carbon-fiber diffuser blades and 10-way-adjustable Bilstein coilovers. The shock mounting points are also adjustable, allowing each corner of the car to be at the perfect ride height with full shock travel.



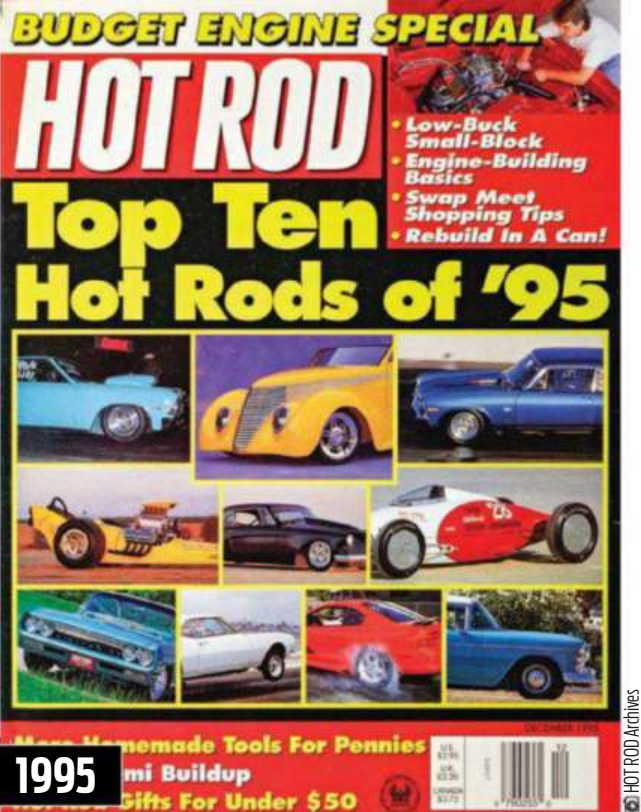
HOT ROD Archives



1975



1955



1995

20 YEARS AGO

December 1995 (124 pages, \$2.95): A cover story recalling the staff's favorite feature cars from the previous 12 issues provides an overview of emerging mid-1990s trends, from restoring early race cars to "Nifty Fifties" restifications, and muscle cars purpose-built for HRM's Fastest Street Car competition. Not until Page 64—following a 12-page Marlboro advertising insert—do details and photos of Mopar Performance's all-new Street Hemi appear. The same elephant motor that Dick and Mike Landy assembled for contributor David Freiburger's Rumble Bee project powers his 1970 Dodge Super Bee to this day.

40 YEARS AGO

December 1975 (116 pages, \$1): Straight-line acceleration still dominates HRM's content. Editor Jim McCraw's recent past with Pro Stock-heavy *Super Stock & Drag Illustrated* is reflected by the cover story and a rare inside look at a siamesed AMC cylinder head that Wally Booth and Dick Arons merged from two stock castings, sawed in half horizontally. Bonneville Speed Week gets four-plus pages from Gray Baskerville, not counting his separate features on barrier-breakers Don Vesco (303-mph Yamaha) and Les Leggitt (317-mph lakester). 'Craw devotes his column to the latest retirement by Don Garlits, fresh from winning his first NHRA championship at Ontario Motor Speedway with the quickest e.t. to date (5.63) and the first 250-mph speed.

60 YEARS AGO

December 1955 (68 pages, 25¢): A high school project that consumed 18 months and \$950 rewarded Don Van Hoff with Eric Rickman's cover shot, followed by a spread detailing his chopped, poked-'n'-stroked (315ci), Merc-powered Deuce. Editor and NHRA president Wally Parks allocates more than six pages to his rain-shortened Nationals in Kansas, along with an editorial blasting cheaters whose illegal modifications resulted in widespread post-race disqualifications of Stock-class winners and national records. Roger Huntington explains how weight redistribution can increase traction, while Ray Brock covers installation of triple Stromberg 97s on Chevy's new 265. > Dave Wallace

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Thursday, 10/29

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Tucson, AZ

- Ticket Price (\$10)
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Racing until 1:30 p.m. or
until complete

RACE DAY #2

Friday, 10/30

**Wild Horse Pass
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RACE DAY #3

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The screenshot shows the Hot Rod Network website interface. At the top is a navigation bar with links to various car categories: HOT ROD, ROADKILL, STREET RODDER, CLASSIC TRUCKS, STREET RACER, VINTAGE, APPRAISAL, FORD MUSTANG, and MUSCLE CAR. Below this is the 'HOT ROD NETWORK' logo and a search bar. The main content area is divided into sections: 'FEATURED CARS' with a large image of a 1933 Continental Coupe, 'HOT ROD TYPES' with a list of categories like Hot Rods, Hot Rod Trucks, etc., 'LATEST ARTICLES' with a list of recent posts, and a 'NEWSLETTER SIGN UP' form. A 'CLICK HERE FOR A 30 DAY TEST DRIVE!' button is also visible.

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The Champion Speed Shop Special

► The racing bloodlines running through the Champion Speed Shop are long and complex, going back through 60 years of tradition, innovation, and racing dominance—Northern California style. HOT ROD is honored to be able to present it as we celebrate the 60th anniversary of the small-block Chevy engine, which is integral to this story, leading up to the 60th anniversary of Champion Speed Shop in 2017. The Champion Speed Shop Special dragster is powered by the quickest Chevy small-block ever conceived, with a best e.t. of 5.67 seconds in the quarter-mile, and it has stayed competitive in the nostalgia ranks of Top Fuel off and on for years, including winning the championship in 2012.



CHAMPION SPEED SHOP AND THE NORCAL RACING SCENE

Jim McLennan in many ways is Northern California drag racing. In 1957 when Jim opened Champion Speed Shop in South San Francisco, it was a wood-shack mecca for all of the Great Highway street racers, gearheads, and roundy racers in the Bay Area. McLennan moved fast to capitalize on the local speed lust and racing fanaticism. Within a year, a 10,000-square-foot facility was built just around the

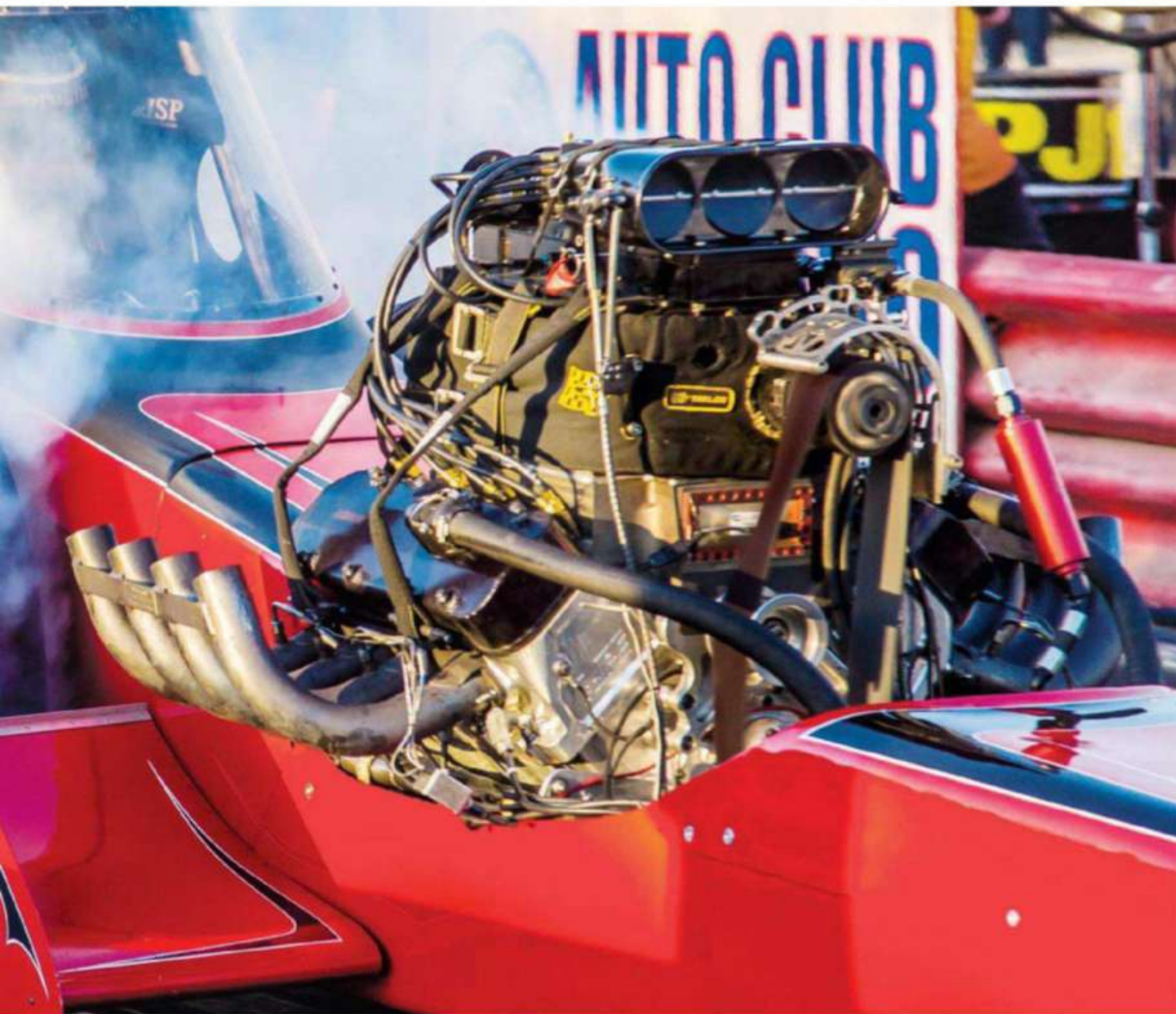
corner on Old Mission Road, and soon after, McLennan partnered with Don Smith, who in the mid-1960s would buy him out.

It wasn't long before he teamed up with "Terrible" Ted Gotelli to pilot his Organ Grinder dragster, while at the same time building a Scotty Fenn dragster running a 364ci small-block Chevy for himself. This was the beginning of a dynasty, and the legacy of the "World's Quickest and Fastest Chevy" Champion Speed Shop dragster.

Having a speed shop in "South City" seeded related paint shops, engine builders, and competing speed shops, which spurred McLennan to branch out from his racer roots. First, he and Smith leased Half Moon Bay airstrip for drag races starting in 1958. A half-hour hop south of South San Francisco, it wasn't long before they also ran Cotati Drag Strip, hidden behind the Santa Rosa, California, hills, hosting drag races at the two strips on alternate weekends.

Smith says Half Moon Bay was well attended. "We had [more than] 14,000 people for the 'East vs. West' race between Don Garlits and Don Prudhomme; Highways 1 and 92 were completely closed, there were so many cars," Smith says. Due to Cotati, California's location outside of the Bay Area, Smith says the best attendance there was in the 1,500 to 2,000 range, for comparison.

McLennan and Smith were instrumental in starting the first



March Meet in 1959 at Bakersfield, with Smith making the first contacts with Garlits. Part of their deal in getting Garlits to come to California was for him to also race two weeks later at Kingdon in Lodi, California. Smith and McLennan felt that neither Half Moon Bay nor Cotati could handle the crowds. "It ended up Kingdon wasn't big enough, either," Smith says. According to Smith, there were so many people they closed the ticket booths and just collected the money people threw into the window holes of the booths!

In 1967 Jim added Fremont Drag Strip to his strip-management obligations, which was a one-hour drive across the San Francisco Bay in Fremont, California.

Within a year of running the world's quickest and fastest Chevy, McLennan decided—because of NHRA's nitro ban—that two were better than one and cut the dragster in half to lengthen it for a twin-engine setup. Test 'n' tunes were done right on Old Mission Road, with fuel and burnt rubber hanging in the damp, night air. But by the end of 1961, Jim had gone back to a single engine, while business and family pressures sent him looking for a driver. He chose a young kid hanging out at the speed shop—one Sammy Hale.

The combo of fresh, new driver and fast, single-Chevy rail worked well, and by 1962 Jim was fielding a new Kent Fuller car with a 114-

inch wheelbase, which Hale immediately ran to 8.36 seconds at 180 mph in the quarter-mile. In Cole Coonce's book *"Top Fuel Wormhole,"* Hale says, "Nobody had ever gone 180 mph with a small-block before." With Hale getting the slip on the clutch, it was holeshot heaven and wins for Champion Speed Shop.

Tired of being away from his family and wanting to focus all of his attention on new ventures, McLennan sold his dragster to concentrate on building Champion Speedway in Brisbane, California, just south of Candlestick Park. A half-mile oval track was constructed, with an eighth-mile dragstrip added in 1967. He made a deal with the race team Masters and Richter to take over the dragster. They immediately heaved the Chevy for a Hemi. Hale was out of a dragster seat for only a short time, finding rides in Vic Hubbard's naturally aspirated Chevy, the Chrysler-powered Masters and Richter dragsters, Gotelli Speed Shop dragster, and Jesse Perkins' Cow Palace Shell fuel dragster.

Managing tracks, concessions, and other real-estate ventures was now McLennan's gig, and he continued in that vein for years. Champion Speedway featured regularly scheduled races until it closed in 1979, as did Champion Speed Shop that same year, after it was sold to Andy Brizio and Cub Barnett in the early 1970s. Half Moon Bay



The Champion Speed Shop Special launching off the line at Famoso in Bakersfield with Adam Sorokin at the helm, shooting for a third championship in 2015—with the quickest small-block Chevy in the world. His father won the March Meet here in 1966.

closed in 1969, and Cotati followed in 1972, but both McLennan and Smith had long been out of management of those strips by the late-1960s.

Good things sometimes just keep rolling. Jump ahead just a couple of years to 1981 and old front engine dragsters and Comp Coupes were but a distant memory when a few of the old timers, fueled by NorCal's Tom Prufer and Brian Burnett, used Fremont as ground zero for a small gathering of vintage dragsters, gassers, and street rods for some e.t. bracket racing. Most of the race cars were relics from the 1950s and 1960s, with no rules governing equipment or safety. It was innocent fun dusting them off, dumping some nitro into the tanks, and seeing if they would fire up and even make it down the strip. They were there only as exhibition racers in between the street rods racing brackets, but this became the launch for what we now know as nostalgia drag racing. Full circle, baby!



SPEED IS IN THEIR BLOOD

McLennan's son, Bobby McLennan, continues the legacy of the Champion Speed Shop today, while Jim's other son, Mike, continues the driving part of the McLennan bloodline. He drove for the nostalgia championship in 2004, piloting Mike Fuller's Forever Young Top Fuel nostalgia dragster.

In 1969 Jim was inducted into the Bay Area Sports Writers' Hall of Fame, in 1993 elected into the National Hot Rod Association's Hall of Fame, and posthumously inducted into the International Drag Racing Hall of Fame in March 2007, one month after his death at age 74.

About his father, Bobby McLennan says, "I've never seen anyone match my father's passion for racing, except maybe Mickey Thompson, who was one of his closest friends. Our goal is to keep Jim McLennan and the Champion Speed Shop name in the winner's circle."



DRAGSTERS OF FUTURE PASTS

Though Jim McLennan's sons, Bobby and Mike, stayed plenty close to their father's racing and management activities as youngsters, by the 1980s Bobby was deep into his own career and



[Champion has been messin' with Chevy small-blocks since the dinosaurs roamed. This bedplate and extended front cover for small-block Chevys were some of the first speed parts manufactured by Champion Speed Shop back in the day. It's just a small part of McLennan's collection of vintage speed parts.]

When it was finished, they closed down Old Mission Road, and with old friend Bud Burnett behind the wheel, they fired it up to a surprised and emotional McLennan. Besides a sentimental night they all wouldn't forget, this one car led to something much larger no one

pursuits. With a degree in economics from the University of California at Riverside, he was involved in real-estate development and starting athletic clubs in the Bay Area, not unlike his father's pursuits 30 years previous. He hadn't been to a drag race in years.

Roy Brizio was starting his car-building career in South San Francisco in the early 1980s and proposed building a replica of Jim's Scotty Fenn dragster as a gift. Roy's connections to the McLennan family and NorCal drag racing are deep, as his father, Andy, was the Half Moon Bay starter for years, and Andy started his roadster-building business in a small corner of Champion Speed Shop. Roy and Bobby grew up together among the racers, nitro, and burnt rubber of NorCal dragstrips.

Bobby thought it was a great idea and opened his checkbook for the recreation. Running a blown 4-71 small-block from friend Bruno Gianoli, mated to a Hilborn injection system they got from Mickey Thompson, it was never intended to be anything other than a three-dimensional representation that fired up and made some noise.



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could have imagined.

Sammy Hale, Jim's first driver back in 1961, drove the dragster at a Fremont nostalgia event later in 1985, and gives his glowing impression of that first drive: "The engine didn't even have aluminum racing pistons and the blower was driven by V-belts. I thought I was driving a Datsun pickup truck." With interest ramping up and original race cars popping up from all corners of the state, there was a reason to at least make some respectable runs to uphold the reputation of the car, its owner, and South City. So a new engine was built, which enabled it to eke into the

high-7-second range. But it was obvious this combo would never be competitive in what was becoming a little more organized and a lot more serious race platform with each passing event.

Next came a new dragster in 1992 built from an Arnold Chaves chassis that had been collecting dust for more than 15 years. It was lengthened to 150 inches, then to 170 inches. Hale drove this car for five years and was able to squeak it into the 6.50s. Hale continued to drive until an engine explosion and fire at Bakersfield. Says Hale, "I was OK, but felt 'someone' was sending me a message to step aside." Subsequent drivers included Harry "High Speed" Hoffman, then Gary Read of "Groundshaker" fame, followed by Scott Hesselgrave.

Then in 1996 things got downright serious. The Goodguys nostalgia series was in full swing, and the race gene in Bobby dominated his being. He had Robert Sterling front-half the chassis, got racing wizard Ronnie Capps to consult, and convinced Hale to hop back in the saddle. Though it was a bit twitchy at first, with a propensity to swap lanes, Hale managed to be low qualifier at many of the races they attended. But they were not consistent enough to win.

Says Bobby, "We replaced the cast Hilborn fuel pump with a Waterman 750 billet pump, then jettisoned the Mallory points magnet for an MSD 44-amp flamethrower, and we added an onboard computer for run data." They also went with a Barnes dry-sump and Crowerglide clutch. Soon after, Hale ran a 6.21 at Sears Point, beating out Denver Schutz and then Ted Taylor, before losing in the final round to Bob Hallock.

In those early days of nostalgia racing, and even up to today, the Hemi reigned supreme, but there were problems with this combo. The old cast-iron blocks couldn't withstand the fire put to them, and engine explosions were common—and killing the show. For the Champion small-block Chevy, Bobby used high-nickel-content NASCAR blocks. Says Bobby, "We could put the coals to them without splitting the block."

It would be a few years before Goodguys allowed aftermarket Hemi blocks, so the Champion team had an edge. Bobby knew once the rules changed for Hemi blocks, he would become less competitive; sure enough, later in 1996 things changed for the fabled team. "We found ourselves going from the top of the class to about twenths behind the leaders in the matter of a few months," Bobby says.

Still, there was another reason besides heritage to stick with the Mouse. The team found some comfort in swapping power for weight,

and so in this heady world of tenths-of-seconds and grams and inches, the mighty Mouse still possessed an advantage over the Hemi.

By 1999 the Champion team fielded a completely new Sterling chassis, a no-frills, potato-chip-light car with a carbon-fiber body, Brodix aluminum heads, and plenty of go; running 5.875 seconds at 239.22 mph, yet overall wins eluded the team. At the 1999

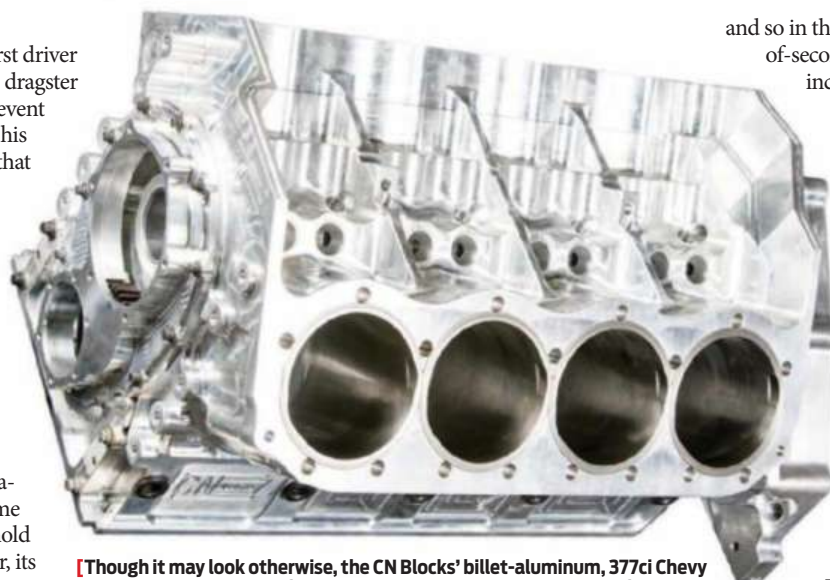
Hot Rod Reunion at Bakersfield against Larry Gotelli Jr., Hale almost flipped the car, and that was when that

"someone" called him again to quit racing for good. It would be his final race for Champion.

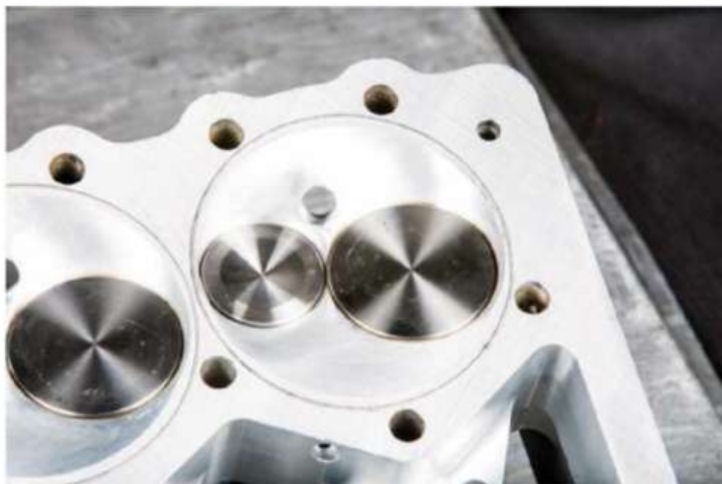
Rance McDaniel replaced the irrepressible Hale from 2000 through 2002. In 2001 they won the Goodguys championship with their Tony Bernardini and McLennan-prepped, 400ci small-block running 5.854 seconds at 239.40 mph. Yet there were still problems to conquer, and not just with the car.

Intake valves kept hanging in the Brodix heads, so Bobby looked for a solution. The middle exhaust ports are siamesed in small-block heads, and with the nitro popping loud and hot, the Achilles' heel was those ports. Things were just too hot, causing one failure after another almost every run.

Alan Johnson manufactured symmetrical-intake-port heads for small-blocks, and Champion got permission from Goodguys to use them. This symmetrical-valve arrangement helped eliminate heat issues as an intake port shielded each exhaust port. But these new heads created heat elsewhere. Says Bobby, "When the word got out



[Though it may look otherwise, the CN Blocks' billet-aluminum, 377ci Chevy small-block will accept a factory iron small-block Chevy head and front cover. Bore is 4 inches and stroke is 3.75.



[The Alan Johnson billet heads feature intake-exhaust, intake-exhaust, intake-exhaust, intake-exhaust valve arrangement, which cuts down on heat generated by the siamesed exhaust ports in a production Chevy small-block head. The previous head with symmetric valve arrangement was causing dropped valves with ever-increasing frequency.



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1964
THROUGH
1972



[The billet rocker assembly locates with the large round tabs seen at the top, making install cleaner and easier during rushed between-rounds action and matching the intake port's roof.

we had AJ heads, the uproar was unbelievable; people were very upset, accusing us of ruining the sport.”

With their winning ways, 2002 would start off with backflips and rainbows, but end in disaster and bitter fallout from a horrendous crash at Boise. As Bobby says, “This was the darkest time in the entire history of the Champion Speed Shop.” Coming into the Boise race, Bobby was trying to keep the engine from becoming a grenade, as usual. He brought four engines with him, two Rodeck cast-aluminum blocks, and two iron blocks. The aluminum blocks would not stay together, and so in quick succession they no longer existed—blown to pieces. Then the first iron block let go in the semifinals, and the team was down to its final engine. In the last round against Jack Harris, as McDaniel approached the traps the bottom blew out, causing a massive explosion. The subsequent head trauma from the crash resulted in a six-month hospitalization for Rance. Within a few months, a lawsuit stopped the entire Champion operation while the courts determined the intricacies of negligence law in the 21st century. Bobby and the Champion crew laid low for more than two years, resigned to seeing the suit take its course, as well as hoping

Rance could make strides in his rehabilitation, which he eventually did. Everyone needed a break.

But as we’ve seen, the will to race is unrelenting, and so after those two long years off, a now more determined Champion team took shape. Arriving in 2005 to tune Brian VanDyke’s RB Entertainment, taking over RB’s 2001 Uyebara Top Fuel dragster, and continuing with driver Jeff “Surfer” Diehl, the Champion Special was back with a new look—and powered by their old nemesis: a Hemi. Bobby was building a new small-block-powered Champion Speed Shop Special dragster, but progress was slow and the Champion team needed to get back to winning.

Toward the end of the 2005 season, Diehl got an IHRA Funny Car ride, leaving the team to look for a replacement. When Adam Sorokin’s services became available, Bobby signed him up, and he’s been with the team ever since. Before this car was retired in 2009, Adam piloted the RB dragster to 5.703 seconds in the quarter-mile. Like father, like son.



ADAM SOROKIN—FATHER TO SON

The name Sorokin is steeped in drag-racing mythology, as Adam’s father, Mike, shoed for the legendary Surfers Top Fuel dragster team in the mid-1960s. The Surfers were a couple of cosmic college kids from Santa Monica and Sorokin, who together won the 1966 March Meet at Bakersfield and terrorized the established racers of the day. HOT ROD has chronicled this story throughout the years, including the October 1998 issue (“The Epic Saga of the Surfers”).

When the Surfers folded up in September 1967, Mike Sorokin went on to pilot other dragsters, before losing his life in a horrific accident at Orange County Raceway on December 30, 1967. Adam was a year old at the time, so while the legacy of his father is etched into his pursuit of Top Fuel driving, he has no recollection of his legendary father.

Through Adam’s late mother, Robyn, the drag-racing flame was kept alive with yearly treks to Orange County International Raceway (OCIR), where she and Adam gave out the Mike Sorokin Memorial Award to OCIR’s Driver of the Year. She was also friends with Don Prudhomme’s wife, Lynn, and Kenny Safford’s wife, Carolyn, so



[Adam Sorokin anxiously awaits the next round of Nostalgia Top Fuel. Having won the championship twice, he knows what it feels like and wants it even more now that it has been three years since last winning.

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[Tom McLennan on the left and Tony Bernardini wrenching on the Special at Bakersfield.]

inside pit access was easy for Adam. Tom Jobe of Surfers' fame was also in his life, but always in an effort to dissuade Adam from driving. Robyn, too, was against him following in his father's footsteps.

It wasn't until Adam's mother was dying from cancer when he was 18 that she finally told him to follow his dream, but do it safely. Eventually, Jobe also came around.

Soon he started taking driving lessons at different racing schools, as road racing was his interest at the time. It wasn't until strapping himself into a Super Comp dragster at the Frank Hawley Drag Racing School that he realized this was the racing he would pursue. After that, he crewed for a couple of teams and says that aspect of racing was not in his genes: "Look, I was a terrible crew member."

By now he was talking with driver/builder Pat Foster regularly about racing, and it was in one of those conversations that Pat told Adam to specialize in driving. Modern Fuel teams specialize, it's not like the old days where one guy owned, wrenched, and also drove. His chance came at the end of 2000 piloting Dave Smith's alcohol Funny Car, winning Rookie of the Year honors his first year up, and then the California Independent Funny Car Association championship the following year.



[The deck height is increased from 9.025 inches for a stock Chevy small-block to 9.500 inches, using 6-inch rods with 6.8:1 compression pistons. Hemis can survive with a burnt piston, but a burned piston means instant destruction for the Chevy small-block.]



[Champion's Bob Molinari two-disc clutch is used instead of the common three-disc setup, and is the only one used in NTP competition. One less clutch and floater means lighter rotating weight, aiding in quicker launches.]

He continued to get driving advice from Foster, and Adam also had long discussions with Jobe about qualities good drivers should bring to a team. Says Adam, "You can't have too much ego if you want to be good."

In this modern age of racing rides for sale, he's never gotten much of a chance to shoe in big show Top Fuel. That hasn't stopped him from making a huge mark on drag racing, piloting the Champion Speed Shop nostalgia Top Fuel dragster since 2005. Slaying the Hemi haulers with a Mouse motor is the stuff of legends.

Adam is first to remind someone that it's not only himself but also his team and fans who have catapulted the team to winning the NHRA Top Fuel Heritage Racing Series championship in 2010 with the RB Entertainment Hemi car, and in 2012 with the Champion Chevy.

His secret is no secret; it's breaking down driving into a mechanical process. "I'm a process-type person, so I have a mental notepad for each stage of driving, and I check it off as I go through the driving process," he says. "I want to pull myself out of the tune-up by being very consistent—the same burnout, the same amount of times in and out of the clutch when backing up, the same starting procedure, et cetera. That way, my driving doesn't get in the way of the combination." The process must be working, as he cuts a very quick light; in fact, he's the quickest leaver in the class, having the best average reaction times since starting Nostalgia Top Fuel back in 2004.

Asked if he was a bit scared his first few times in a Top Fuel seat, he says, "I have a very healthy respect for these cars, but fear wasn't the first thing on my mind. I didn't want to embarrass myself. I came from a driver of high regard and I didn't want to F that up. But also, I didn't want to be just Mike Sorokin's son-who-drives-a-dragster—I want to be Adam Sorokin."

His racing résumé covers experience in almost all forms of racing, from road racing karts to sprint cars. While Adam practices and plans for his next race, he works at Technicolor in Hollywood, California, running its quality-control department, having been involved in digital masters quality control for more than 20 years. Both his son, Mike, and wife, Jenni, are totally behind his racing exploits, usually assisting him at points meets.

So would he let Mike drive Top Fuel? Says Adam, "Sure, as long as it's for the right reasons—for himself and not to be famous or whatever." And he adds that after all of these years driving Top Fuel, he never thinks he's got the whole thing figured out.

CHAMPION SPEED SHOP SPECIAL CREW

Tony Bernardini, Crew Chief

Owner: Four Star Automotive Inc, South San Francisco, California

Jeff Stitch, Engine

Clayton Auto Service, Concord, California

Mike Perry, Heads

Kibblewhite Precision Machining, Pacifica, California

Dave Carkhuff, Lower End

Ned's Auto Body Supply, Concord, California

Nick Sharp, Oil and Fuel Specialist

Honda Mechanic

Tom McLennan, Clutch

Contractor

Tom Homer, Fuel

Retired, Worked at Champion Speedshop in 1961

Bob Gavron, Cook

Retired, Worked at Half Moon Bay in 1961

Pat Farrell, Truck Driver/Clutch Surfaces**Rod Zanolini, Clutch and Wax**

Contractor

Connie O'Leary, Computer

Financial Analyst

Car Ownership

McLennan Family

With Special Thanks: Roy Brizio, Sammy Hale, and Ken Crawford

After doing this for so many years, we asked if the thrill had worn off just a bit? "Front-engine Top Fuel dragsters are the most humbling cars on the planet," he says. "I've never been bored. They're exciting, but they can also kill you—they killed my dad. Just like in the old days, the driver sits right over the rearend and the clutch is in between your feet. I know my own edge, and I drive with my ass; I just know how far I can hang that ass out." Words to live by, ladies and gentlemen.



CROWNING THE CHAMPION

For 2009 Bobby McLennan campaigned a new Sterling car purchased from Dan Horan Jr. in 2004, running alongside the new Neil-Parks RB car with Hemi power they added in 2010. Adam drove both. The Champion Speed Shop Special dragster, known as the Batmobile, was unique for more than its Chevy power and red and black paint. It's got a cockpit canopy.

"Bobby had the idea to use a canopy to make the car distinguishable and safer," Sorokin says. "I didn't have a say in it, but I had already been driving for them three years and they're a great team, so I'm OK with the canopy. I prefer an open car so that when they blow up and I'm oiled-in, I can pull a tear-off and can see. With a canopy, when you blow up, you're blind. Would I prefer the quick way to see? Yes. Do I mind the canopy? No." Bobby said the idea for "something different" came from seeing another NorCal dragster in his youth: the canopied "Glass Slipper" dragster. Says Bobby, "I knew the canopy adds some weight [around 20 to 25 pounds], but I thought the new car needed something. Jeff Teaford drew it up to give us an idea of what it would look like, and Jack Hageman built the body."

Recently, they have replaced all of the aluminum with lighter-weight carbon fiber in an effort to get 100 pounds out of the car. That's one of their goals going into 2016, further weight cuts. "The last 100 pounds is crazy expensive—about \$200 a pound to lighten," Bobby says.

Adam says Bobby is not afraid to spend money to win. "Bobby doesn't run the car on a budget, and that's super important from a driver's standpoint," Sorokin says. By 2017 Bobby sees a new, lighter car as the next step in the evolution of the only small-block Chevy Top Fuel dragster in the country.

On a final note, Bobby says, "Sammy Hale once said to me, 'Bobby, when you pass through the pit gate, there is only one thing we are here to do: get the gold and leave with class.' No pressure, right?" Sammy, I think those are two things...



SLAYING ALL HEMIS WITH A MOUSE

Chuck Nugent at CN Block (CNBlocks.com) machines the small-block from an aluminum billet. Bore is 4 inches and stroke is 3.75. The engine comes in at 377 ci. The deck height is increased from 9.025 inches for a stock Chevy small-block to 9.500 inches, using 6-inch rods with 6.8:1 compression. However, stock Chevy heads can still bolt up, so the bore centers are the same as stock.

It's called a "Y-block" due to the main caps being level with the pan rail. Interestingly, Champion Speed Shop was the first to make available girdles for small-block Chevys in the day, so there is a certain déjà vu to their current setup. Mains are six-bolt—four in the conventional location and two more from each side of the main—like a modern LS engine.

The engine's brain is the cam and is the work of Sammy Hale, Mike Perry, and Kenny Crawford. Yes, Hale is still involved with the car after all of these decades. The cam originally opened the intakes at 35 degrees before top dead center and they have varied timing events and its duration. Through flow-bench testing and a lot of trial and error, they discovered the air in the cylinders started stacking up with the valves staying open for a long duration, stressing the valve-



[There are 24 lines for fuel injectors: eight injectors for idle, then 16 injectors for the hit—with eight going into the cylinders and eight into the blower dumping supercharged fuel into the engine, but also cooling down the supercharger in the process.]



[The new Littlefield LB-21 supercharger for the 2014 season changed everything about their previous combination. "Boost starts ramping up drastically at half-track—exponentially. We used to run 6.8:1 compression and 96 percent to straight-can nitro with 350 pounds fuel pressure," Bobby says. "Now we are running much less compression and also less percentage of nitro."



[This is the Fuller car with 364ci small-block spinning a 4:71 GMC blower with Algon injectors. This car with Hale driving was number two on the Drag News Mr. Eliminator list for most of 1962, against Chryslers and Olds dragsters. That's Jim McLennan in the white shirt with Bruno Gianoli at Half Moon Bay.



[Here's the 114-inch Kent Fuller chassis dragster from 1962, which driver Sammy Hale posted 8.36 seconds at 180 mph almost immediately off of the trailer. Hale was known for wicked reaction times combined with slipping the clutch at just the right rate to increase traction. Combined with the lighter small-block Chevy weight, it was a winning combo.

train. Once they realized this, they took out a lot of lift and slowed the profile down, which has had a positive effect on the whole rotating mass.

Part of the reason for the Chevy's slower speed in the quarter-mile—as compared to a Hemi—is that the airflow to the cylinders is not a straight shot like a Hemi, which affects the upper limits of the Chevy's potential.

Essentially, the Mouse is at its limit of airflow. Says Bobby, "I don't think the Chevy will run 270 mph." So the car needs to be a jackrabbit off the line.

Bobby ran a 6-71 Mooneyham K11 supercharger for years. They had dialed-in the fuel-to-boost ratio, and the team had a lot of success in the clutch, while Adam's consistent driving kept them in the game. Then in 2014 they put on a new Littlefield LB-21 supercharger, and that changed everything about their combination. At the March Meet in 2014, the boost was crazy—at times running 40 pounds. The Chevy won't survive once boost hits 38 pounds, so the mayhem began. "Boost starts ramping up drastically at half-track—exponentially.

We used to run 6:1 compression and 96 percent to straight-can nitro with 350 pounds fuel pressure," Bobby says. "Now we are running much less compression and also less percentage of nitro."

They are the only team that runs a two-disc clutch instead of the common three-disc setup. One less clutch and floater means lighter rotating weight, a hallmark of their Chevy setup.

With a 3.90 gear in the rear, Adam keeps the engine to 10,000 rpm, though the Chevy will survive at close to 11,000 rpm. The Bob Molinari clutch is the required six-lever clutch, but in working with Molinari, they have experimented with lever angles and feel pretty confident with their current setup, which Bobby won't reveal.

Whereas the Hemis can survive with a burnt piston, it's devastating for the small-block. A burned piston means instant destruction. So there are advantages and disadvantages to the small-block.

So what's the difference between a Hemi and Chevy in the seat of your pants? Sorokin has a good perspective on the characteristics between the two, as he's driven both. He says the Chevy is fast off the line to about half-track, much more so than the Hemi. "It moves down low," he says, but has no top end. The Hemi pulls from half-track "like crazy." He says the Chevy is a handful at launch to half-track, then cruises from there, whereas the Hemi is easy to maneuver from launch, then it becomes a handful when the power comes on at half-track.

Interestingly, besides the difference in the sound from the cockpit, Adam says the Chevy "springs" off of the tires at launch, while the Hemi will turn the tires due to the torque. So the response from the Chevy is jackrabbit-like, and the numbers bear this out. At half-track, the elapsed time is 3.70 seconds at 216 mph, while a typical Hemi is 210 to 212 mph in nostalgia Top Fuel. That may not sound like much, but it's a huge advantage in the quarter-mile. The miles per hour for the Chevy in the quarter-mile are 247 mph versus the Hemi at around 270 mph. At 800 to 900 feet, the Chevy flattens out, but he says he seems to be getting farther down the track before the engine breaks or a supercharger explodes. "I've been on fire or the supercharger has exploded too many times to even remember exactly how many times it has happened," Adam says. "I stopped counting years ago. Blowing up tends to come with the territory." □

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Top: Factory Five Type 65 Coupe flat out at Bondurant. Bottom Left: Five-Day Build '33 Hot Rod runs 11's at Bristol. Bottom Right: Factory Five customer Greg L. wheels up and running 10's way back in 1999.



[We revis-
ited the Speed
Demon after
the frame was
powdercoated
and final
assembly was
underway.



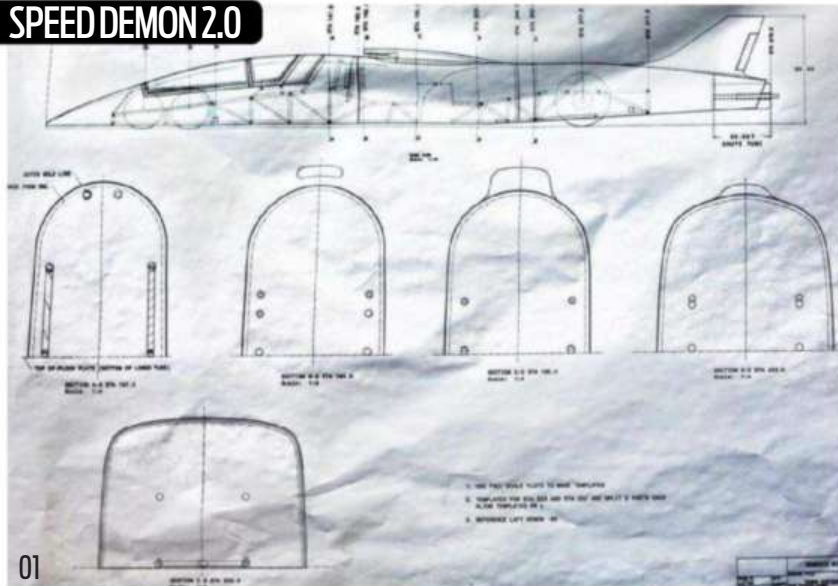


SPEED DEMON 20

Speed Lessons From the World's Fastest Piston-Powered, Wheel-Driven Car

📷📱 **Brandan Gillogly**

► The Speed Demon streamliner holds the title of the world's fastest piston-powered, wheel-driven car, taking the HOT ROD trophy for the fastest flying mile for five consecutive years at Bonneville's Speed Week with current records in the SCTA's Blown Fuel Streamliner class as fast as 437 mph. Even more impressive is that it accomplished that speed with a single, twin-turbocharged small-block V8 displacing 368 ci. After a crash in September 2014, the team decided it was time for a new chassis and a whole new build that would benefit from their years of experience and 30 passes at more than 400 mph. Speed Demon Racing Team members Steve Watt, Aron Cranford, Danny Drinan, Dave Main, James Diviak, Scott Lacy, Tommy Horn, Joe Galati, and driver George Poteet allowed us to take a look at some of the new tricks to make their land-speed racing endeavor even more successful as the streamliner—now known simply as Speed Demon—comes together.



WHY SMALL-BLOCK?

When Speed Demon was designed, the powerplant the team had in mind was an inline-four, so once they'd successfully campaigned the four-cylinder Hemi and needed more power to take the car into 400-mph territory, the Speed Demon team relied on the Chevy small-block's size to package it within the confines of the car. Even if a big-block would have fit (which it wouldn't), the issue at Bonneville is traction, and the team didn't need the extra torque that comes with more displacement, making a small-block the perfect choice.

All three of the Speed Demon's engines use 4.131–4.155-inch bores and vary displacement by using a different crankshaft stroke. They each use Dart Little Chief heads, so while they're small-blocks in bore spacing and displacement, they resemble miniature big-blocks. Rather than a siamesed design with adjacent exhaust ports in the center of the head that concentrate heat, their port arrangement is the same as big-block.

01 This is a plan for the original Poteet & Main Speed Demon, but a similar plan was made to help the body and chassis come together on the new car.

02 Based on the plans, templates were made to match the cross-section, ensuring that the new chassis and body would fit perfectly. The medium-density fiberboard (MDF) templates are 0.060-inch oversize compared to the chassis and match the body exactly.

03 All of the Speed Demon Racing Team plans began with hand drawings that are then turned into CAD files.

04 Most of the body is bolted on. These floating nuts allow for a bit of misalignment. The tabs are welded to the chassis and the nuts are riveted to the tab.

05 Kenny's Components, aka "Carbon Kenny," in Mooresville, North Carolina, made the body using carbon fiber, with honeycomb reinforcement on just about all of the flat parts. Some panels latch on.

06 A major goal in the new Speed Demon was mass centralization and mass reduction. So far, they've dropped more than 1,000 pounds and the engine is now 8.5 inches forward and an inch lower.

07 On each side of the engine, there's an 8-gallon ice-water tank for the intercooler and they're also lower and farther forward. They're made from aluminum this time around, rather than stainless steel. The black cylinder just aft of the bulkhead is one of four hydraulic rams used to lift the Streamliner for transport.

08 All of the hydraulic systems used to be onboard, but now this cart houses the XS Power batteries and hydraulic pump.



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01 An access panel on Speed Demon flips up and has couplers for hydraulic power and electricity.

02 One spot where weight savings takes a back seat is safety. These wheeltubs were bent from 1/8-inch steel and offer protection from blow-outs on the tandem-mounted front wheels.

03 The previous front wheels had no suspension, and while the new Speed Demon has a pivot, it's really just there for data collection from a load cell. It will allow the team to measure downforce on the front wheels for the first time. The aluminum block is just a placeholder for now.

04 A DJ Safety fire bottle protects driver George Poteet. A separate fire system behind the firewall uses Stat-X aerosol that suppresses fire but doesn't harm electronics. Switching to Lithium Pros 16-volt lithium batteries saved 85 pounds.

05 The view from the cockpit shows the fire system, a few buttons, and the MoTeC display.

06 A Schroeder street-rod-style steering box with very tight tolerances keeps slop out of the steering system.

07 Wilwood clutch and brake master cylinders mount just in front of the steering box.

08 The Speed Demon Racing Team was also concerned about making engine changes easy and fast, as they can compete in multiple classes depending on which engine they run. These couplers allow for a strong connection yet come apart quickly.

09 The tight tolerance in the coupler is due to the electrical discharge machining (EDM) process that cuts with an electrically charged wire that's thinner than a human hair.



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01

01 The Speed Demon competes in three classes and has an engine for each class. Each engine has CNC-machined plates, 3/4-inch rear and 1/2-inch front, that bolt to the engine and act as lift points. A lifting apparatus mounted to a rail on their support trailer will lift the engine and drop it on a dolly, so it will never touch the salt. To swap engines, the water lines, fuel lines, and electronics are disconnected so the engine can be lifted out. Each engine has a complete oil system that stays with the engine.



02

02 Each motor plate has recesses to mount these mil-spec connectors for the electronics.

03 The team was excited about their new Jodar clamps. They allow for a bit of misalignment with the intercooler ducting on initial assembly, but the final hinged and pinned connection aligns and locks everything in place.



04

04 Jiffy-Tite plumbing fittings allow for quick release like a compressed air line that doesn't leak fluid once uncoupled. They're used for fuel, which the Streamliner needs plenty of. Switching to Brown & Miller hoses and fittings saved 200 pounds compared to the last car.



03

05 To make more than 2,000 hp, the 368ci small-block uses three injectors per cylinder: two electronic, one mechanical.

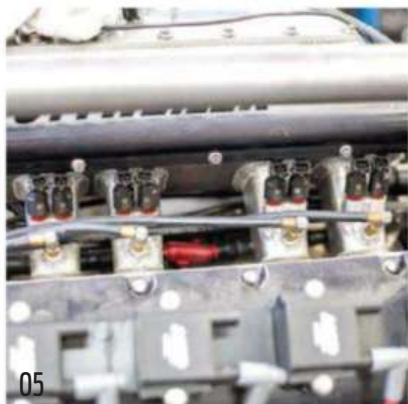
06 The Streamliner doesn't use a radiator. It runs for about a minute, so it only needs 14 gallons of water circulating through the engine to stay cool. Turbosmart blow-off valves set at 45 psi are mounted to the engine water tank. In the event of a head-gasket failure venting combustion pressure into the water jacket, the valves will open and vent into the engine compartment without bursting the custom-built aluminum water tank.



06

07 Tommy Horn had just finished bending up the transmission drain lines for one of the air-shifter Liberty seven-speed transmissions.

08 The 15-inch steel wheels up front wear 21-inch-tall experimental Goodyear tires made specially for Speed Demon. Rear wheels were 18-inch steel pieces on the last car, but now they use a two-piece aluminum billet wheel made at Rad Rods by Troy with Mickey Thompson tires.



05

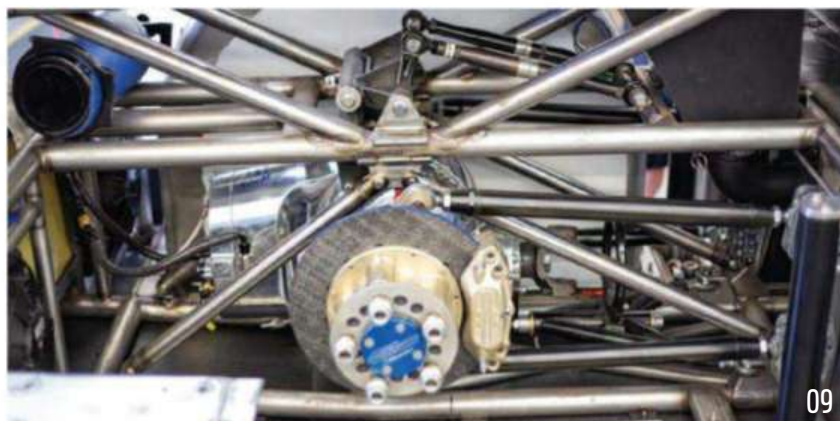
09 Rear axle is a billet Ardun quick-change made by Don Ferguson with a 10.5-inch ring gear that's similar to what you'd find in a Sprint Car. The 2.31:1 ring-and-pinion ratio leads to the quick-change gears that make it an even taller 1.67:1 final drive. With the two larger engines, the team uses a Liberty seven-speed transmission with a 3.31:1 First gear. For the higher-revving, 300ci engine, the team uses a 3.5:1:1 First gear and a 1.75 final drive. Suspension and steering both use F-Q rod ends.



08



07



09

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several racers who participate in the Ohio Mile are also Bonneville racers, so while our HOT ROD Top Speed Challenge is about street-legal cars, there's always incredible variety in the field at all the ECTA events. Here's a sampling of what you might find at any given event held by the ECTA.



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Judicious use of tape and a small rear wing help the Death Proof Camaro cut through the air.



DEATH PROOF CAMARO

The Death Proof team brought their 1979 Camaro to defend their win in the Real Street class, and their 221-mph performance was just out of reach for the Second Place Rydin Decal team, which ran a 237-mph pass on the first day of the event but failed to leave the track under their own power after the car's brakes locked up after pulling the chute, which is an immediate disqualifier for the Top Speed Challenge. Despite trying to match their earlier success, the Rydin Decal team's big-block-powered, third-gen Firebird came just 1 mph short of the Death Proof team on their fastest run on the final day of racing.

Powering the Death Proof Camaro is a 530ci Chevy big-block using a Dart block and heads. Eric Von Hentschel at Von Eric Performance designed the engine setup and Rick Miller and Dennis Jones of All Cape Machine assembled, dyno-tested, and installed the engine that makes 913 hp on C14 race gas through a Dominator carb. On top of that, it has a single stage of nitrous good for an additional 125 hp. The drivetrain consists of a Turbo 400 trans and 2.50:1 rear gears that have the car tripping the lights at the end of the mile at around 7,300 rpm, well short of the car's 8,000-rpm redline.



A big-block Chevy and nitrous seems to be the recipe for Top Speed Challenge winners. This Dart-based, 530ci V8 dyno-tested at 913 hp.

GEEZER II FIREBIRD

The Geezer II team returned to defend their Super Street title with their 1987 Firebird. Last year, the car's supercharged, 555ci big-block Chevy with dual four-barrel carbs ran 213.87 mph using high-octane E85 fuel. This time, although the hard parts are identical to 2014, they switched to race gas and were able to break the beams at 215 mph. Brian Acton has been the team's driver since 2010, when he began filling in for driver Ben Herr after Herr was unable to take his place behind the wheel due to health concerns and Geo Turner, the team's previous co-driver, had scheduling conflicts. After driving the Super Street-clinching pass this year, Brian handed the car over to his 16-year-old son,



Standing by the Death Proof Camaro are (front row) Bill Amaral, Iaian MacArthur, (second row) Ken Mansbach, Eric VonHentschel, and Rick Miller. On the left, standing by the Geezer II Firebird (from left to right) is Kyle Acton, Trevor Acton, Dawn Acton, Brian Acton, Geo Turner, John Pranger, and Jon McLellan.

Kyle, who was able to get into the ECTA's 200-mph club. Brian's son, Trevor, then got in the car and made a 200-mph pass of his own so all three could say they made 200-mph passes at the same event.



Last year, the 555ci big-block ran on E85, which made for much less expensive fill-ups, but the team switched to race gas this year.

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RYDIN DECAL FIREBIRD

This Firebird, known by the team as Lucy, was built in the late-1980s by Jim Ruttman, brother of NASCAR driver Joe Ruttman, to compete in the NHRA's Super Gas class. Mark Weiler bought the car and was impressed with the quality of its construction. Despite the fact that it was 25 years old, it didn't need much work to make it safe and competitive in its new role as land-speed racer.



[The Rydin Decal team (from left to right): Otto Jacobi, Eric Gellman, Bob Wells, Hunter Bell, Edward Sellers, Carl Dillon, driver Jay Bell, Mark Weiler, Greg Drake, Austin Drake, Carl Slate, and Jacob Bell.

It uses a 569ci big-block Chevy built by Chris Seidle. It has a Sonny Leonard top end with CNC-ported Brodix heads and is fed by a Pro-Systems SV1 single-barrel carb. It's good for more than 900 hp on its own, but a 400hp nitrous fogger system from Induction Solutions gives it the extra power to hit a best of 237 mph.



[Huge CNC-ported cylinder heads and a 400hp nitrous system added up to a 237-mph pass, although it didn't qualify the Rydin team for the HOT ROD Challenge because they towed the car away after flat-spotting all four tires when the brakes locked up after the run.

FOUR-BANGER FORD RANCHERO



[The Calaguiros are a racing family. The Ranchero has been competing in standing-mile events for more than 10 years.

When we talked to Paul Calaguiro about his fire-breathing 2.3L OHC-powered 1962 Ranchero, he didn't hold anything back: "I have no secrets, this isn't drag racing." In fact, Paul welcomes competition in his class so he'll have someone to run against. If you'd like to build a Ford 2.3L with around 325 hp and trip the lights in the standing mile at close to 150 mph, here's a solid recipe. Start with an Esslinger ARCA five-tower cylinder head, which has an extra cam bearing compared to the factory's four-bearing head. Add a sizable solid-roller cam that doesn't

really like anything below 5,000 rpm, but does like 0.717-inch lift on the exhaust and 0.737-inch lift intake. Use Jesel roller followers for longevity when shifting at 9,500 rpm, oil it with a Barnes three-stage dry sump, and feed it with a pair of 500-cfm Holleys on a homebuilt tunnel ram made from an Esslinger downdraft Weber intake manifold. Dial the compression up to 14.9:1 and light off C25 race fuel with an Electromotive crank trigger ignition.

Paul bought the head new and sourced some of the parts, like the Barnes dry sump,



[This 2.3L four-cylinder sounds angry at idle and isn't happy until around 5,000 rpm, pulling all the way past 9,500 rpm, like half of a Pro Stock V8.

from racing surplus, although he said he had enough invested to buy it new anyway after it was rebuilt. The drivetrain isn't particularly exotic, with a face-plated Doug Nash 4+1 five-speed with a 1:1 Fifth gear that uses a twin-disc, 5.5-inch button clutch to link power to a Ford Thunderbird 8.8-inch rear axle filled with 4.10 gears. For cooling, Paul uses the tiny radiator the Ranchero had when it was powered by the factory 170ci inline-six, although it's been recored.

2JZ 240SX

Jerry Hoffman is the founder of DIYAutoTune, a company that specializes in Megasquirt engine management that can power everything from snowmobiles to class-winning Drag Week V8s. This Nissan 240SX uses a Toyota 2JZ 3.0L inline-six with the factory block filled with 8.5:1 Mahle pistons and Manley rods. It's topped by a ported-factory cylinder head and uses GSC



[Because the Nissan 240SX is in the blown gas coupe class, the team can't do much with aerodynamics, although the team reports the car does quite well at speed even though it has never been in a wind tunnel. Chalk that up to the experience of Ryan Fain, who helped set up the chassis and get the car balanced.

Continued on page 52 >

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until complete

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Saturday, 10/31

**Auto Club
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- Ticket Price (\$10)
- Gates open 1 p.m. /
Final round 6 p.m.
until complete



Continued ...

Power Division S2 cams. A Turbonetics 79mm turbo feeds it 32 pounds of boost using a patent-pending spool-assist system that uses compressed nitrogen introduced to the turbocharger's exhaust turbine to quickly spool up the turbo and make boost. With a standing-mile event where high-rpm launches and burnouts aren't allowed, and in a class that doesn't allow nitrous, building boost early can make a huge difference. There's no missing the spool assist when

Jerry leaves the line, as the car sounds like a jet, with turbo noise eclipsing the sound of the exhaust in a very unexpected way.

A MegaSquirt-III Pro ECU is used not only to control fueling, but also as part of a traction-management system. Front and rear wheel-speed sensors and GPS measure wheel slip and speed. Boost is added based on vehicle speed. If the sensors detect rear-wheel slip from differing wheel speed, the MS3 can pull timing as well.



The Toyota 2JZ GTE is a 3.0L twin-turbo inline-six originally found in America in 1993–1998 Toyota Supras. Now the boosted six sends power to a G-Force GF4A transmission and a GM 12-bolt rear axle with 3.73:1 gears.

JUNKYARD CHEVROLET C10

Paul Shauck runs Hot Rods & Threads in College Grove, Tennessee, where he builds a lot of high-end custom cars, so this build was a departure for him. He came across the C10 while looking for a 1956 truck, but the \$600 price was too good to pass up. He decided early on to leave the 55-year-old paint alone because it just plain looked right. The hood is the only piece that's not wearing its true patina. The 1961 had its original drivetrain and hood, but the twin-eyebrow hood of the early C10s wasn't going to cut it; the later hood is a fiberglass piece from a 1962–1966 that a customer of his shop had sitting around. For \$100 it, too, was scooped

up. Aside from the custom paint that does a remarkable job of matching the rest of the truck, the hood was also treated to some custom cutting, with a pie cut of the top half to make the truck just a bit more wedge-shaped.

The C10 uses an iron block 5.3L from a 2001 Tahoe with a 4-inch stroke to get a new-school, 383ci displacement. Twin 62mm inducer turbochargers feed boost and give the truck around 750 hp. The drivetrain consists of a Turbo 400 with a Gear Vendors and a 9-inch with 3.50 rear gears. At the 2015 Ohio Mile May meet, the truck ran a best of 162.92 mph—not bad for cinder-



The new fiberglass cowl hood blends in well with the rest of the truck's original paint.

block aerodynamics! When the truck's not using its race bucket seat, Paul installs a denim-upholstered bench seat and cruises the truck in College Grove.

CANADIAN 1964 PONTIAC STRATO CHIEF

Easy, Pontiac purists, put the pitchforks down. Like all Pontiacs sold in Canada, Dwight Horne's wagon from north of the border was originally equipped with a Chevrolet engine. In this case, Dwight's Safari came with a 283ci V8, so the 496hp Chevy 350ci that's powering it now is perfectly fitting. Using Edelbrock Performer RPM

heads and an Edelbrock Victor Jr. intake, the 4,200-pound former daily driver is now used solely for land-speed duty, having run at Bonneville and at Loring, Maine, where it hit 150 mph in the standing mile. The small-block power hits the concrete through a Muncie four-speed and the factory rear axle with a 3.36:1 ring and pinion.



Dwight Horne's 1964 Strato Chief was one of the largest cars we spotted at the Ohio Mile.

V-ROD LAKESTER

The WTFO Racing Team, made up of Jake Burton, Carl Patrick, Dave Pleasant, and Kurt Fountain, built this lakester over the course of two years by working on Tuesday and Thursday nights and the occasional Saturday morning. It uses a fiberglass body built by Gotham Cruisers in Dayton, Ohio, a shop known for their Batmobile replicas. The body started out with the same dimensions as a P-38 drop tank, but was modified with the addition of the scoop on the top, while 4 inches were removed below to make a flat bottom. Patrick, a former XR-750 flat-track racer, found a former Harley-Davidson V-Rod powertrain that was decommissioned

after spending some time in the company's research and development department. The engine was bored and stroked from the factory V-Rod dimensions, so now it displaces 89 ci, putting it in the H engine class for both the ECTA and also for SCTA as the team hopes to make it to Bonneville. Dyno testing showed 164 hp at around 9,000 rpm, which was enough to push the lakester to 153.65 mph at the Ohio Mile.

01] The front canopy came from a Red Bull stunt plane. They trimmed it down and it fit the contour of the body, improving visibility.

02] The V-rod engine and transmission are mounted together on a swing arm, and pivot together. The rear axle is solid, with a chain final drive, sort of like an ATV, and uses a single Wilwood disc brake.





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HANKOOK Ventus S1 noble2	HANKOOK Ventus V12 evo2	MICHELIN Pilot Super Sport	PIRELLI Cinturato P7 All Season Plus	PIRELLI P Zero Nero GT	TOYO TIRES Proxes TQ	YOKOHAMA ADVAN Sport A/S
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F.R. Mustang 2010 18	F.R. Mustang 18	Hotchkis H-Sport 20	Hotchkis S-Sport 20	Hotchkis Y-Sport 20	Hotchkis Y-Sport 20	Ultra Muscle Knight 17 18 20
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BRAKES

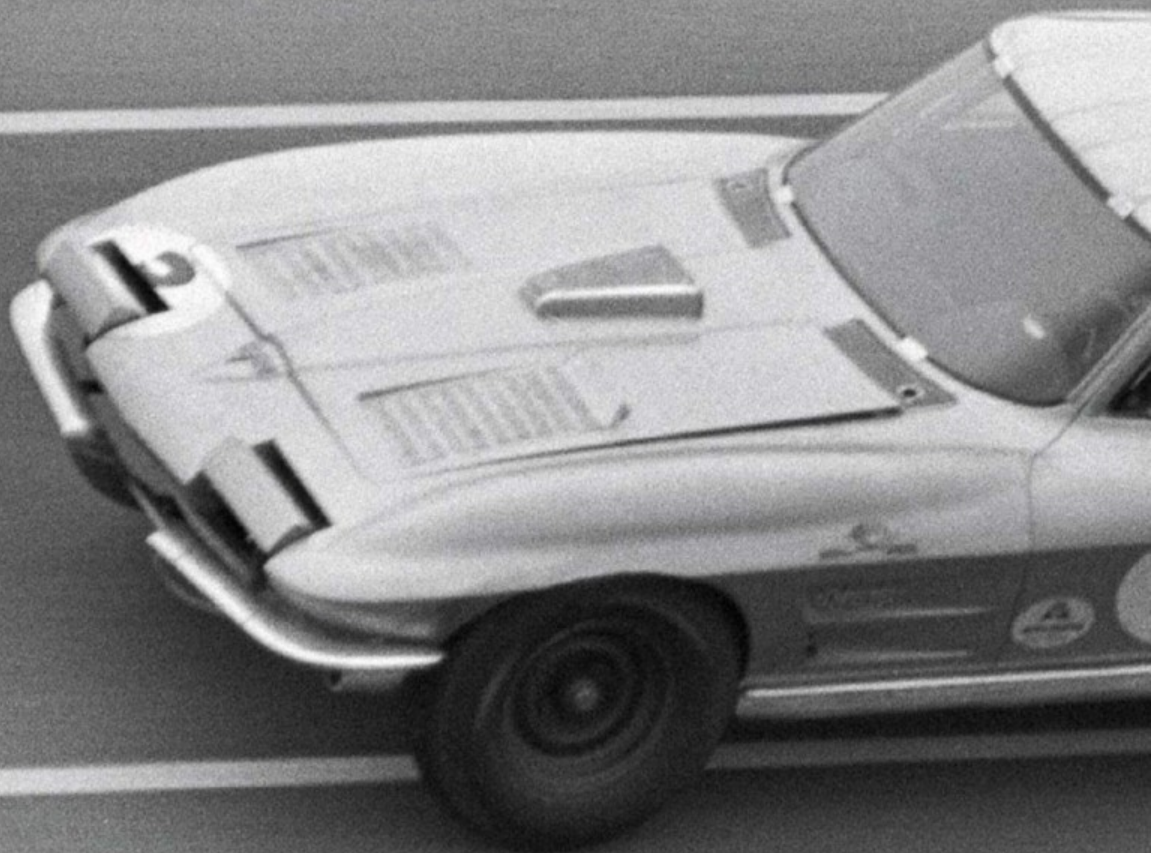


SUSPENSION



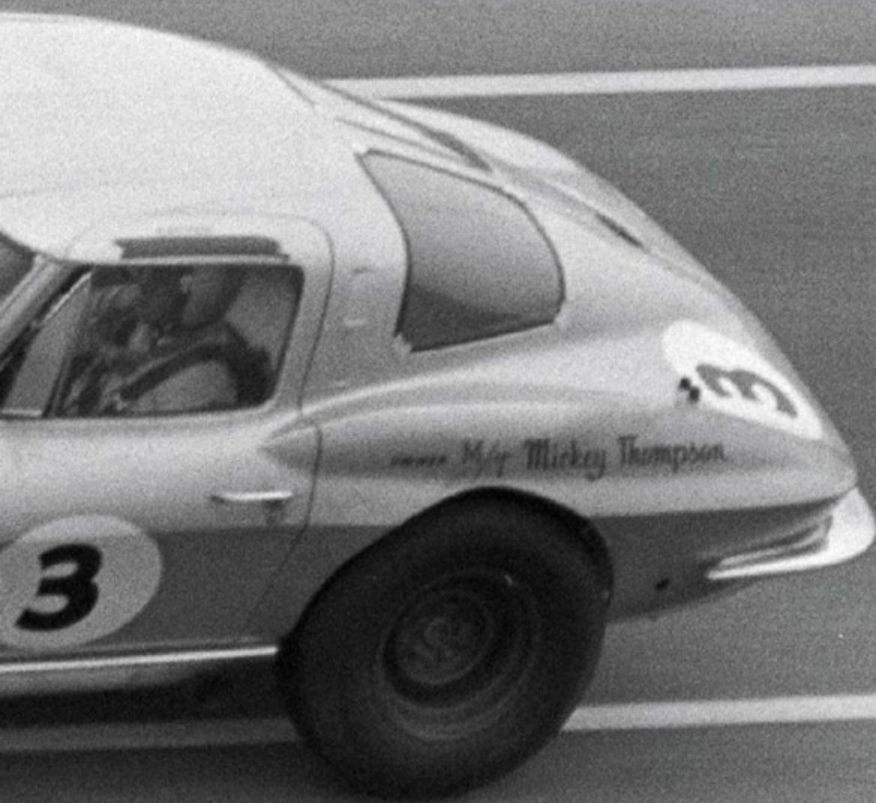
427

Mystery Motor Corvettes



The 396ci Mark IV big-block Chevy went into production 50 years ago for the 1965 model year. Chevy guys will tell you its Mark II Mystery Motor architecture debuted in Impalas at the 1963 Daytona 500. Ford guys will tell you that none of the Mystery Motors ran well enough to finish in the top five. Turns out, none of that's true. The 427ci Mystery Motors secretly raced eight days earlier—in a pair of 1963 Corvette Z06 Sting Rays—and one finished third.

Forget Everything You've Been Told About the 1963 Debut of the 427ci Big-Block Chevy! Mickey Thompson, Zora Arkus-Duntov, and Smokey Yunick Really Raced the First Mystery Motors—Before the Daytona 500—and Chevrolet Never Wanted You to Know



✍ David Kimble 📷 HOT ROD Archives

➤ Zora Arkus-Duntov's high-performance engineering group was responsible for Corvette engineering and Chevrolet's high-performance V8 development when the 348ci W-engine debuted for the 1958 model year. The solid-lifter version with triple two-barrel Rochesters was rated at 315 hp (and was Chevrolet's most powerful engine) while the Corvette's fuel-injected, 283ci small-block was only rated at 290 hp. Duntov resisted putting the 348 into the Corvette,

arguing its additional 100 pounds would compromise handling. By the time the Sting Ray came out for 1963, the W-engine had 409 ci and produced 425 hp with solid lifters and dual four-barrel Carters, but again, it wasn't on the new Vette's option list. Duntov didn't feel the "fat block" 409 could pull its own weight. But there was a 427ci V8 on the horizon he would be happy with in a couple of years. Hot rodder Mickey Thompson, however, wasn't going to wait.

[Built by Smokey Yunick for Mickey Thompson, the two 1963 split-window Sting Ray race cars (our No. 3 cover car shown here during practice) were a mixture of Z06 road racing and NASCAR Grand National parts. At the time, nobody noticed Chevy had an all-new V8 at Daytona, but the rear-facing hoodscoop gives away there's a 427ci Mystery Motor under the hood.



In 1962, Mickey Thompson was under contract with Chevrolet to campaign four Z06 Corvette Sting Rays in international GT endurance racing. As part of that program, the 34-year-old Californian had two of his Sting Rays equipped with 427ci Mark II-Stroke (Mk IIS) big-block Mystery Motors. These big-block cars were prepared like NASCAR Grand National cars of the day by Smokey Yunick for the American Challenge Cup, a 250-mile GT sports car race on Daytona's 2.5-mile tri-oval that took place on February 16, 1963—eight days before the Daytona 500 where most people think Chevy's Mystery Motors debuted. You've never heard about any of this because General Motors had a corporate ban on racing in place when all of this happened. Fifty-two years later, as HOT ROD celebrates the 50th anniversary of the big-block Chevy, it's time we tell you the whole story.

MICKY THOMPSON'S MYSTERY MOTOR CORVETTES

Mickey Thompson had helped Pontiac shake its stodgy 1950s image and become thought of as a GM performance brand, using a line of speed equipment and attention-grabbing cars like the Challenger I powered by four Pontiac V8s he drove more than 400 mph at the Bonneville Salt Flats in 1960. Thompson had been a Pontiac contractor, working directly for Semon Emil "Bunkie" Knudsen, who was Pontiac's general manager at that time but was running Chevrolet by 1963. Thompson Enterprises was a front for Knudsen's factory Corvette team. Knudsen also brought Smokey Yunick back to Chevy from his Pontiac NASCAR racing program. Yunick had won the second Daytona 500 for Knudsen with a 1960 Catalina he prepared, which was driven by Marvin Panch.

Mickey Thompson received a Daytona Blue Z06 Sting Ray prototype from Knudsen via airfreight in July 1962. It would be the first 1963 Corvette to ever win a race—the Los Angeles Times Three-Hour Invitational at Riverside, California, on October 13, 1962. Both the Shelby Cobra and new Corvette made their racing debuts that



[Thompson (standing in white) hired Junior Johnson and Rex White to drive the big-block Vettes, and they qualified first and second for the American Challenge Cup. Not only were these Corvettes the first Mystery Motor cars to ever race, they're also the first big-block 427 Corvettes ever made.



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- 1999 & 2006 - Gen III 4.8, 5.3 & 6.0L Mechanical Throttle



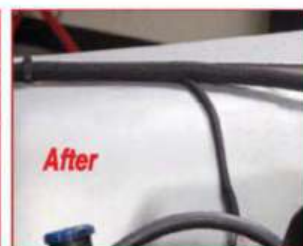
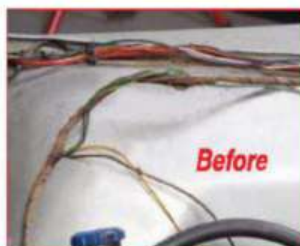
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When it came time to race the big-block Sting Rays, Johnson said he wasn't going to drive the ill-handling machine, so Thompson had ex-Shelby Cobra road racer Billy Krause drive Johnson's car. Thompson is shown here (left) next to Krause (right) in front of one of the small-block-equipped Corvettes during practice.



Race day was cold and wet. Grand National cars wouldn't have run on the tri-oval in those conditions, but the American Challenge Cup began on schedule. Those are Thompson's Mystery Motor Corvettes in the front row.



Rex White worked with Chevrolet to develop the Mystery Motor for the Daytona 500 at GM's Mesa, Arizona, proving grounds. But those engines weren't in Corvettes and those cars didn't have the Sting Ray's all-new independent rear suspension, which would prove to be a handful at 160 mph on Daytona's super speedway.



Of the two big-block cars, the silver No. 3 car prepped for Johnson received more modifications. It used a Plexiglas windshield and side glass, and reportedly had six-lug front wheel hubs.

day; driver Bill Krause dominated the race in his Cobra until it broke a stub axle, and Doug Hooper (driving Thompson's Z06) got the win.

Technically, 1963 Corvette Z06 production began in October 1962, with six cars painted either Ermine White or Sebring Silver, and three of them were soon heading west from the St. Louis Corvette plant, driven by the men who were to race them at Riverside. Two others, one painted white and the other silver, were sent to the FIA's New York office for homologation to make the Z06 Sting Rays eligible to compete as production cars. They were then shipped to Mickey Thompson's shop in Long Beach, California. These cars were soon joined by two more Z06s, again Ermine White and Sebring Silver, for Thompson to drive on the street. The silver Corvette that had been inspected by the FIA went to Smokey Yunick's "Best Damn Garage in Town" in Daytona Beach, Florida, where it was later joined by the white one, and both of them received rollcages, the 427ci Mk II NASCAR Mystery Motors, and Saginaw three-speed transmissions that the Chevrolet Grand National cars ran on the oval tracks.

Yunick and his boys had the silver Z06 the longest and gave it the full NASCAR treatment, preparing it with Firestone Stock Car racing tires on reinforced steel wheels mounted on six-lug front truck hubs. They set up the front suspension with a straight antiroll bar that had splined actuator arms, spring rubbers, and two shocks per corner. The exhaust pipes were run inside the framersails and exited through the rocker panels just ahead of the rear wheels. Heat from the exhaust necessitated replacement of the rear portion of the fiberglass floor with an aluminum panel. The Sting Ray's rear wheelwell openings were shaved to keep the oversized tires from rubbing when the springs compressed on the banking, and the Z06 36.5-gallon fiberglass fuel tank was replaced with a 50-gallon metal one for the 250-mile race. To save weight, a Plexiglas windshield, side, and rear windows were fit to the cars and magnesium rear axle housings took the place of the stock cast-iron parts.

Despite its additional displacement, the 427ci Mystery Motor was designed to fit into the same engine compartments as Chevy's small-block, with nothing but a notch in the front crossmember needed to drop into the Sting Rays. The only clearance problems were with the 427's magneto and Holley 4150 four-barrel carburetors, which stuck up through holes cut in the 1963 Corvettes' hoods and were covered by one of Thompson's blower scoops cut in half. The scoops faced forward when the cars rolled out for practice, but were turned around by the time they raced to take advantage of high-pressure air at the base of the windshield—the same principle that the Mystery Motor Impala's cowl induction system was based on. The only modifications made to these engines were headers that fit into the Corvettes, and replacement of their 409 Delco-Remy distributors with Vertex magnetos.

1963 DAYTONA SPEED MONTH

NASCAR's Bill France was quite a showman, and by 1963 had turned Daytona Speed Week into a Speed Month with racing every weekend during February at his four-year-old Daytona International Speedway. The American Challenge Cup was presumably his idea and could have been inspired by the Race of Two Worlds, where Indy roadsters competed against Formula One and sports racing cars on the banked Monza oval track in Italy. Mickey Thompson signed two NASCAR stars who were driving Mystery Motor-powered Chevrolet Impalas in the Daytona 500 to drive his American Challenge Cup big-block Sting Rays. The 27-race-winner, Junior Johnson, was behind the wheel of the silver No. 3 Corvette, and Rex White, the 1960 Grand National Champion, who had also done the Mk II engine program track testing for Chevrolet engineering, was driving the appropriately colored white No. 4 Corvette.

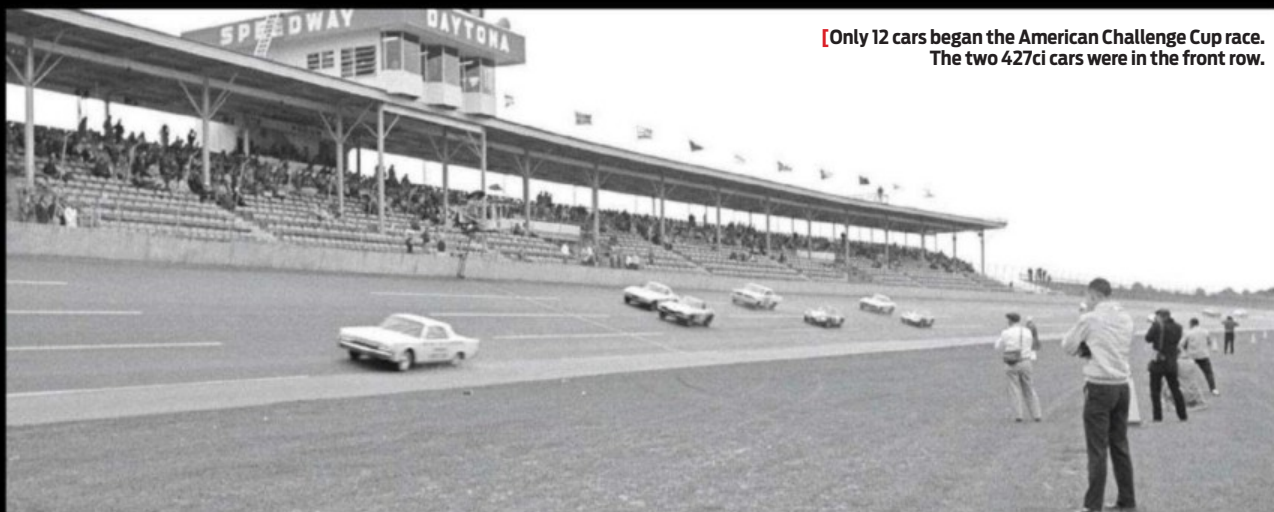
The Daytona Speed Month kicked off with a two-day Sports Car



White's No. 4 car did have one thing Johnson and Krause's No. 3 didn't: a windshield wiper.



All four of Thompson's Z06 race cars (big-block and small-block) were fit with aluminum deflectors on the driver side of the car during practice or qualifying.



Only 12 cars began the American Challenge Cup race. The two 427ci cars were in the front row.

Club of America (SCCA) event on the combined tri-oval and infield road course, and most of these races were run in the rain. The following weekend on a dry track, Don Vesco became the first American to win the Grand Prix of the United States for Motorcycles. The action then moved entirely onto the tri-oval on Sunday, February 10, 1963, when there were two pre-qualifying races for the two Daytona 500 qualifying races and another race to qualify for the American Challenge Cup. Each of these was scheduled for 10 laps. Most of the American Challenge Cup and Continental cars hadn't shown up yet, and even with Mickey Thompson entering all four of his Corvettes, the car count was only seven; with the field so small, qualifying was shortened to five laps. To no one's surprise, Junior Johnson won this in 4 minutes, 39.40 seconds, followed by Rex White, both in Thompson's big-block Sting Rays. Paul Goldsmith in the Ray Nichols' 421ci Super Duty-powered Pontiac Tempest came in third.

Thompson's Corvettes were the fastest GT cars around Daytona's tri-oval, but they were a handful to drive and Junior Johnson had an easier time lapping at 164.083 mph in Ray Fox's 1963 Impala than he did averaging 162.220 mph driving the Corvette. Johnson felt the Z06 was capable of 180-mph laps "with the proper setup," but Thompson and his crew were primarily drag racers, and even though he was entering his own cars for the second time in the Indy 500, they "never found the handle," according to Johnson.

It was raining on Saturday, February 16, when the 250-mile American Challenge Cup race was scheduled to run on the tri-oval. Even though the SCCA races had run in the rain two weeks earlier, they had been on the road course and this was a NASCAR-style oval race.

WHAT MAKES A CORVETTE A Z06?

Chevrolet's alphanumeric regular production option codes started for the 1963 model year with "L" for an engine prefix and "Z" for chassis packages. The Corvette's top engine option was regular production option (RPO) L84, a fuel-injected, 360hp 327 which, although available separately, was mandatory with RPO Z06, which was the 1963 Corvette's racing package. Initially available only with the split-window coupe, this package was a collection of other RPOs and dedicated racing parts that weren't otherwise available, including a fiberglass 36.5-gallon fuel tank.

The Grand National cars never raced in the rain, but GT cars did, so the event started on schedule.

Thompson's pair of big-block Sting Rays started from the front row where they qualified, but with Bill Krause—not Junior Johnson—behind the wheel of the silver No. 3 car. The headline in the *Daytona Beach News Journal* read, "Car Didn't Act Right, Junior Got Out," and after morning practice, the car's handling was so evil that's just what he did. Thompson's crew had torn the Corvettes down in their motel parking lot the night before to look for problems, and in doing so had created new ones, not only losing what little progress they had made in the cars' balance but making Johnson's car worse than when it first ran.

The race started with Paul Goldsmith's Pontiac coming from the



[White made it 38 laps in the No. 4 Corvette (shown here in qualifying without the windshield wiper installed) before bringing the car into the pits with complaints of zero visibility.

the second row outside of Fire Ball Roberts' No. 22 Ferrari GTO and blowing past the struggling Corvettes on the wet track, to take the lead on the first lap, where he would stay to the finish in the white No. 50 421ci Tempest. As the race progressed, Thompson's Corvettes' floorpans started taking on water that sloshed around. The exhaust systems heated the aluminum floor panels, creating steam that fogged the cars' windshields. Handling deteriorated as the understeering monsters' front tires wore, and after driving for 38 laps inside what must have felt like a light bulb (at speeds of more than 150 mph), Rex White pitted the No. 4 car and told Thompson it wasn't safe to continue because he couldn't see. Thompson grabbed a helmet and took the car out for a lap before a rear suspension lateral link broke, bringing him back to the pits for good. Bill Krause had



[Thompson then hopped in No. 4 in an attempt to finish the race himself—only to break a rear suspension arm on his first lap.



[While White and Thompson couldn't keep the No. 4 car in the race, Krause soldiered on. Though the No. 3 car never got a windshield wiper, it appears Thompson's crew ripped the Plexiglas side windows out to keep the inside of the car from fogging up.

driven only 10 practice laps in the No. 3 car before the race started, but he toughed it out, and with his road-racing experience on wet tracks, came in a distant third to AJ Foyt in the Nickey Chevrolet's No. 17 small-block Z06.

After Krause's impressive drive in the Cobra at Riverside, Thompson had lured him away from Carroll Shelby with the promise of bigger things and Krause's Third Place was the team's best result of the weekend. For the three-hour Daytona Continental race the day after the American Challenge Cup, Pontiac somehow managed to homologate the 421 Tempest as a production GT car, and by virtue of having the largest engine in the field, Paul Goldsmith started on the pole with Bill Krause beside him (in a small-block Z06). Goldsmith was out in three laps with a broken fuel pump while Krause stayed in the lead pack for half the race until his silver No. 4 Mickey Thompson Corvette's 327 fuelie threw a rod. This was a lot better than Doug Hooper in Mickey's Riverside-winning Daytona Blue No. 4 small-block Z06 fared, lasting only 14 laps.

Of the 12 Z06 Corvettes that started the Daytona Continental, only three finished, with Dr. Dick Thompson (no relation) coming in third behind a pair of Ferrari GTOs. This was the end of Mickey Thompson's Corvette team's short history, with it, as well as all of Chevrolet's other racing activities, falling victim to a GM corporate crackdown after the Daytona 500.

FORD'S FIRST DAYTONA WIN

Most of the GT cars competing in the Daytona Continental arrived during the week with Briggs Cunningham's lightweight E-type Jaguars rolling off his truck, along with a Tipo 151 Maserati Le Mans coupe-with-a-difference. Cunningham's mechanic, Alfred Momo, had crammed a dual-quad, 427ci FE Ford V8 under its hood for NASCAR ace Marvin Panch to drive in the Challenge Cup, but this engine swap was a deadly combination. The Maserati was a lot lighter than the Corvettes and the big-block Ford a little heavier than the 427ci Mk II, making it even more of a challenge to set up, so Panch was on the edge of control lapping at just 150 mph. After a few laps, the springs and shocks were changed, but Panch didn't go back out until the next morning; the last thing he remembered was lifting off at the end of the back stretch and hitting the outside guardrail. The Maserati flipped and caught fire as it crossed the track, landing upside-down in the infield. NASCAR driver Tiny Lund helped turn the car over and pull Panch from the burning wreck. He then took over the Wood Brothers Ford for the Daytona 500 at Panch's insistence, and ultimately went on to give Ford its first Daytona 500 victory, despite the onslaught of power the Mystery Motors packed that year. ■



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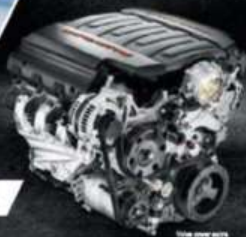


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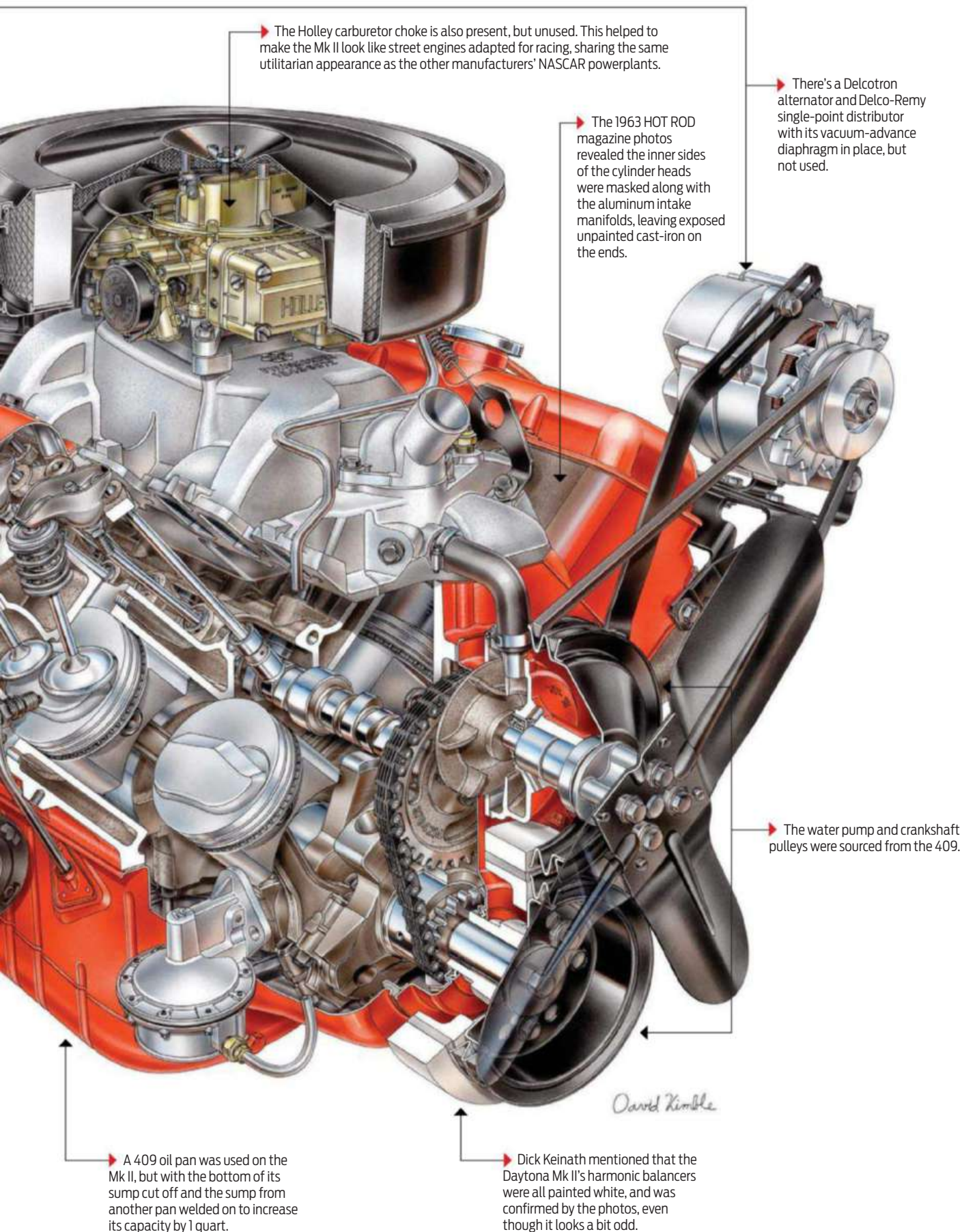
52 Years After the Rat Motor First Raced, It Still Has Secrets to Reveal

► When Chevrolet's all-new, 427ci Mk II engine showed up out of nowhere at Daytona in 1963, the press called it the "Mystery Motor," and with no other designation disclosed, the name stuck. The publicity and information blackout around these first Rat motors was Chevrolet General Manager Semon "Bunkie" Knudsen's response to a GM corporate mandate to cease all racing. As a result, there were no press releases, spec sheets, or any other published information about the new race engine. Mechanics had to rope off their garages at Daytona to hold back crowds of the curious who were hoping for a look, and anyone from Chevrolet who was recognized by journalists had to tactfully avoid their questions.

After the realization that these questions weren't going to just go away, it was decided to reveal the Mystery Motor's mechanical details to one car magazine. HOT ROD's technical editor, Ray Brock, was invited to go with the engine's chief architect, Dick Keinath, to a shop in Daytona Beach, Florida. Brock brought photographer Bob D'Olivio along with him to document a torn-down Mystery Motor and was allowed to take measurements, but Keinath wasn't very forthcoming with information. In his May 1963 article, Brock referred to the Mk II as the "heavy-duty 427" and the photos from that story allowed cutaway illustration artist David Kimble to compare the internal parts from a Daytona Mk II to the ones he had GM Powertrain photograph of the Mystery Motor it still possesses.



["Mystery Motor," "Porcupine engine," or "H-D 427"—the Mark II Chevy big-block engine was called many things in 1963, but 50 years after the 396ci Mk IV went into production for 1965, we now know the whole story about how it came to be.



▶ The Holley carburetor choke is also present, but unused. This helped to make the Mk II look like street engines adapted for racing, sharing the same utilitarian appearance as the other manufacturers' NASCAR powerplants.

▶ There's a Delcotron alternator and Delco-Remy single-point distributor with its vacuum-advance diaphragm in place, but not used.

▶ The 1963 HOT ROD magazine photos revealed the inner sides of the cylinder heads were masked along with the aluminum intake manifolds, leaving exposed unpainted cast-iron on the ends.

▶ The water pump and crankshaft pulleys were sourced from the 409.

▶ A 409 oil pan was used on the Mk II, but with the bottom of its sump cut off and the sump from another pan welded on to increase its capacity by 1 quart.

▶ Dick Keinath mentioned that the Daytona Mk II's harmonic balancers were all painted white, and was confirmed by the photos, even though it looks a bit odd.

David Kimble



In 1963 when the 427ci Mk II engine debuted, the press had no idea what they were looking at, but they knew based on the lap times and valve covers these were no 409s.



THE FATHER OF THE MYSTERY MOTOR

The mystery that drove journalists crazy at Daytona was eventually resolved, but there is still a cloud of secrecy over these engines because they were produced like experimental prototypes, with only a bare minimum of documentation to save time and maintain security. The Mk II's designer, Dick Keinath, told Kimble he had some documents in his basement about the engine, but they were mixed in with other material from his 33 years at Chevrolet. Keinath said none of the minimal engineering drawings had survived, so Kimble never took the time to dig for them. In retrospect, Kimble regrets this because Keinath did maintain a log of all the Mk II engines with their engine numbers, date of assembly, and disposition.

The vast majority of the Mk II engines were reportedly scrapped, but a few of them have survived and are scattered across the country in museums and private collections. The street Mk II in GM's collection is probably the only one that Chevrolet did not scrap when its test program came to an end, and it spent years on display at GM's Tonawanda, New York, engine plant. This has led some to assume that the Mystery Motors were made there like Chevy's production Mk IV, Mk V, Mk VI, and Mk VII big-blocks, but Keinath, who ran the program, said all Mk IIs were built at the Chevrolet engineering center in Warren, Michigan.

BIG-BLOCK OR SMALL-BLOCK: WHAT DOES IT REALLY MEAN?

Whether an engine is considered big or small depends on its displacement, but whether it is a big- or small-block is determined by its displacement potential and not its actual capacity. The key dimensions that limit an engine's displacement are bore-center spacing, determining the maximum cylinder diameter, along with the distance from the crankshaft centerline to the block deck limiting the length of the stroke. Almost all of the American overhead-valve, central-cam pushrod V8s that came out after World War II had 4- to 5-inch bore centers and a 9- to 10-inch block deck height. Generally, an engine is called a big-block if its bore centers are more than 4.5 inches and its deck height is greater than 9.5 inches, regardless of its displacement. This makes Chevrolet's 400ci small-block that came out in 1970 a big small-block, and Pontiac's 1964 326 which was a small-bore 389, a small big-block.

When Chevy's 265 came out in 1955, it was GM's smallest V8 but wasn't called the "small-block" until the Turbo-Thrust 348 W-engine joined it in the 1958 model year. The 265 had been punched out to 283 ci by 1958 and had 4.40-inch bore centers, while the 348's bore centers were 4.84 inches with in-block combustion chambers that made its block deck height difficult to compare to a conventional 90-degree block. The W-engine's block decks crossed its cylinder centerlines at a 74-degree angle 10.244 inches above the crankshaft centerline, separated from the top of their cylinder bores by a 16-degree wedge combustion chamber. These dimensions put the W-engine in big-block territory with the Mk II Mystery Motor and the production Mk IV sharing its 4.84-inch bore centers and having a 9.80-inch block deck height. ☐

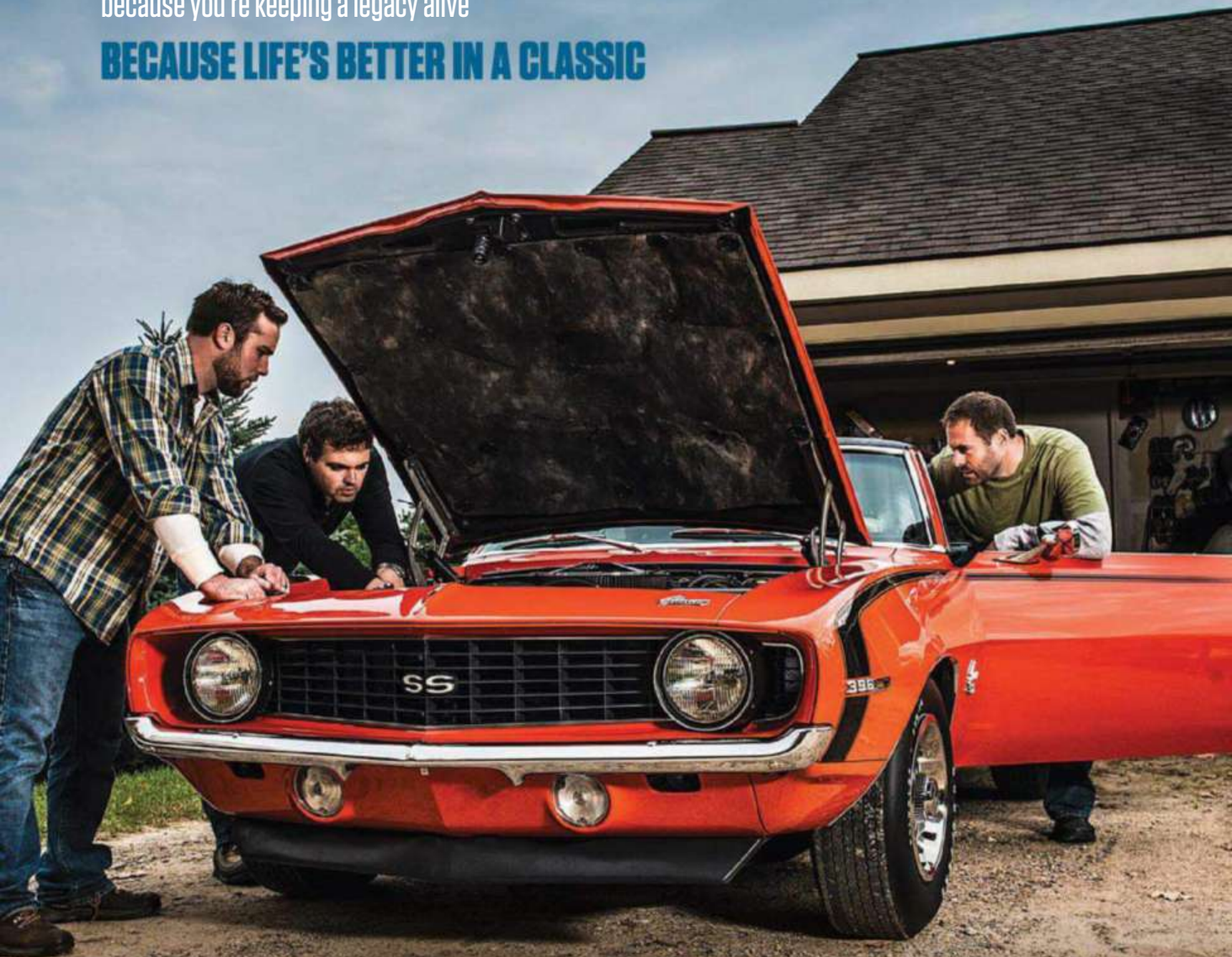
"Dick Keinath was the best engineer all of Detroit had in 1963."

— Smokey Yunick, from the 2001 "Best Damn Garage in Town...The World According to Smokey"

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RAT-MOTOR RESURRECTION

Mickey Thompson's Missing Mystery Motor
Z06 Corvette Is Returned to Its **427ci**
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✍️ Thom Taylor

📷 Wes Allison, Brandan Gillogly, Dani Nemeth, Thom Taylor, and HOT ROD Archives





This overall shot is how McIntyre purchased the Mystery Motor at auction from Smokey Yunick. As you can see, it looks like a production 396/427 big-block, yet it's anything but. Externally, the head castings feature a lot fewer bosses and accessory mounting surfaces, and the weird freeze-plug location is a big tipoff this is an odd duck.

It's rare for a magazine to be the impetus for someone to take a priceless racing engine and slide it into a million-dollar car, and honestly, when this idea came about in 2014 we were a little reluctant to even ask. It's rarer still for a project of this magnitude to come together to celebrate the 50th anniversary of a production engine as storied as the big-block Chevy. But perhaps the greatest part of this tale is that every Chevy guy swears he knows how the big-block Mystery Motor first raced in an Impala at the Daytona 500 on February 24, 1963—and it turns out that's totally wrong. As you read on the proceeding pages, the true story is the Mystery Motor actually made its racing debut a week earlier—in this car.

HOT ROD's part in this tale began when we interviewed cutaway illustrator David Kimble in 2014. In our follow-up conversations, he reminded us one of the most significant pieces of the Chevy big-block legacy was hidden in plain sight no more than 30 miles from our office. Kimble acknowledged HOT ROD had covered part of the Mystery Motor's story, recognizing its 50th anniversary in our December 2013 issue, but said we'd missed the fact the famed engine we photographed was owned by Tom McIntyre, who also owned one of the rarest Corvettes ever built—and that the two were connected.

It turns out the big-block Chevy Mystery Motor wasn't first raced at the Daytona 500 in a midsize Chevy like we all think. It was, in



[Note the massive sway bar and related bracketry for the high-banked Daytona oval. At this point, the Mystery Motor is in and the headers are being fabricated, but there's still a lot of work to do to complete the conversion back to 427 Mk II power.



[The telltale cast-iron valve-stem guides wiggle around the top of the heads and are a sure sign you're looking at a Mk II Mystery Motor, not a production big-block. These guides would be stamped steel on production big-blocks. You can see the unique arrangement of the valves that are angled to the center of their respective combustion chambers.

HOW MANY MYSTERY MOTORS?

Based on an internal confidential Chevrolet Motor Division document from Vince Piggins, dated September 21, 1962, to those involved with both the 427ci Mark I Z11 (W-engine) and the 427ci Mark II (Mystery Motor) programs, this was the production schedule for Mark II engines:

First engine: Nov. 5, 1962 (for testing at Mesa Proving grounds)

Second engine: Nov. 12, 1962 (for testing at Mesa Proving grounds)

Eight more engines: Jan. 2, 1963 (Daytona Corvette/NASCAR)

Ten additional engines: Jan. 31, 1963 (Daytona NASCAR racing)

That puts the number of Mark II engines produced at exactly 20. McIntyre's engine is from the January 2, 1963, run of Mark II engines.

Piggins mandated that high-speed testing at the Mesa, Arizona, Desert Proving Grounds begin no later than November 15, 1962, and that NASCAR be invited to inspect the engine before December 10, 1962—"the deadline for new material competing at the Daytona 500"—in February 1963.

fact, raced in two 1963 Corvette Z06 split-window Sting Ray Corvettes Mickey Thompson had built in 1962 to race in the 1963 NASCAR American Challenge Cup. That makes these two Corvettes the first to ever have a canted-valve big-block Chevy for power. But that's not all. The big-block originally nesting in their engine bays was not any sort of production big-block but was what's known as a Mystery Motor, one of maybe 20 (20, no typo) 427ci Mark II prototype engines produced in the development of what eventually became the Mark IV (Mk IV) 396ci/427ci/454ci Chevrolet big-block.

So HOT ROD being HOT ROD, we called McIntyre and asked if he would please pluck out the pedestrian small-block that for years had powered him and the Sting Ray through road-racing courses around the country in SCCA B/Production and install that Mystery Motor sitting around doing nothing? Oh, and we would need it for our December issue.



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McIntyre's not new to HOT ROD, as we featured another rare racing Chevy of his a few years back—his 1968 Penske Sunoco Camaro Trans-Am champion—and his cool barn-find Williams Brothers 1928 roadster with a 1954 Hemi back in the October 2007 issue. And just so you know, he's actually considered a Ford collector, to give you an idea of how he fits into this whole car world.

After a few moments of silence, he started thinking out loud about how he bought the 427 Mystery Motor with the intention of someday putting it into his Mickey Thompson Corvette—that historically it would be significant, that he had pretty much done everything he wanted to do racing-wise with the car, and that being in HOT ROD sweetened the pot, but he'd need to gnaw on the idea. You can tell Tom's the type who thinks things completely through before making a move.

So we went on with our lives, and then one day he called to let us know he had decided to take HOT ROD up on its offer of nothing in return for him going through the process of having Dave Dralle partially tear down the engine to see if it could actually run, dyno it to see how it would run, then build the headers and swap it out so that it could run, and dial it all in so it would run.

Mickey Thompson had prepped two 1963 Z06 Corvettes with Mystery Motors: No. 3 driven by Junior Johnson and Bill Krause, which is McIntyre's car, and No. 4 driven by Rex White and Mickey Thompson himself, as chronicled in David Kimble's article on page 54. Johnson landed on the pole with White second fastest. The Thompson Corvettes dominated the front row of the grid, but there were problems.

Race day was wet, and Johnson got out not wanting to drive the ill-handling Corvette in the rain. Speaking with Junior Johnson about the car all of these years later, he immediately remembered the Z06. "It was all over the track," he says. "It wouldn't settle down to take a bite of the track—it was just restless. You'd mash the gas and it would turn one way, and let off and it turned the other. It was the most advanced car that anyone had there, but I think it was so advanced nobody knew what they were doing with it."

Not known as the type to just walk away from danger, we asked Johnson how he felt about giving up the seat to Krause. "I didn't trust my knowledge with somebody else's car to be able to help them," he said. "It was just all over the racetrack and I just thought it was not safe to drive." Wow!

So Thompson put road racer Billy Krause in and he, too, found he had power he couldn't use—and a lot more. Krause soldiered on in

the wet and finished third behind Paul Goldsmith in the Pontiac and AJ Foyt in another Corvette. The car White and Thompson drove did not finish due to a broken suspension.

HOT ROD talked with Krause a few years ago, and he distinctly remembers driving the No. 3 Sting Ray as well. He agreed with what Johnson had said—that the car was a scary ride, due mainly to the independent rear suspension. When he would accelerate out of the turns, the car would go from understeer to strong oversteer in a snap. He had to learn to steer partially by steering wheel and partially by acceleration, a learning curve taking place during the race. But don't forget the 1963 Sting Rays were brand new, and these were the first races they appeared in. While it would seem obvious that the independent rear would do a certain amount of steering, testing had been minimal. And also remember that the Mystery Motor testing in Mesa, Arizona, had all been done in Impalas with live axles. The combination of the steeply banked oval, heavy 427ci engine in front, and independent in the rear made for a scary ride.

Krause was one of the original Cobra drivers for Shelby, but when Thompson paid him a visit about his Chevy deal, his offer to drive one of the Sting Rays was too good for Krause to pass up. They were going to race the Sting Rays for the whole season with Chevy backing. So he left Shelby for Thompson, which lasted for exactly this one race, with GM slapping Chevy and enforcing the racing ban right afterward. Says Krause, "Sometimes you come to a fork in the road where you turn left or right. I turned left when I should have gone right, and regret it to this day."

With the race over and Chevy done racing, Smokey Yunick removed the engines before the Corvettes were returned to Thompson. Thompson sold car No. 3 to Norm Burger of Sherman Oaks, California, who installed a 327ci small-block and began road racing it, usually with Doug Hooper or Billy Krause driving. Dick Guldstrand is known to have driven the Vette at Cotati and Seattle, and Tony Settember was also reported to have raced it.

HOW A FORD GUY SAVED THIS RARE CHEVY

By 1976, McIntyre was racing his 427 Cobra in the A-Production SCCA class. Andy Porterfield, who raced a 1968 Corvette in the National B/P class, approached him at a race with a proposition. Porterfield had borrowed an old Sting Ray he used to train co-drivers for endurance racing at Riverside, and the owner now wanted to

sell it. He told McIntyre about the car, but McIntyre bled Ford blue and was really not interested in an old Vette, and declined the offer. Says McIntyre, "About a year later, Andy was back and I was literally forced to take this car out of his shop and take it home. What was I going to do with this beat up old car?" It was cheap—Porterfield was oddly adamant McIntyre buy the car—so he made out a check to Norm Burger, handed it to Porterfield, and dumped the car off at a friend's garage in Santa Monica, California. It sat there for a few years, then was moved outside of McIntyre's Burbank, California, warehouse, where it sat another year or two.

"I was getting pounded in A-Production by the Can-Am cars," McIntyre continues. "My Cobra was classified to run with FIA and the Can-Am cars because of its 427ci engine size, which was fine until the big-bore McLaren M-8 cars started entering the class."

Then he remembered that ratty Corvette; if set up properly, it would make a fun, killer B-Production race car. So he got friend Phil Schmidt to help him with cleaning up the car and preparing it to race. Schmidt almost completed the car, with blue paint and suspension upgrades, when another project came up, so the finishing touches were handed off to Jim Wallace. Wallace plumbed and wired the car, set up the suspension, and Dave Dralle installed the small-block.

As they dug into the car, they discovered some strange stuff had been done to the Sting Ray. The gas tank was huge, yet made well, and the differential appeared to be magnesium. *Hmmmm.*

Dralle got the Vette race-ready for some shakedown runs at Willow Springs in May 1983, and so it was ready for its debut at the 1983 Monterey Historic races in August. And that's where some of the Corvette guys noticed it and started asking questions about its past. McIntyre knew little about it. When McIntyre purchased the derelict car, there were no number tags present. Everyone wondered why.

Back to the track, some of the Corvette curious asked if they could pull some pieces off of the car in the hope of finding some chassis numbers. They knew something. Says McIntyre, "The next morning three guys show up in white coveralls and started pulling pieces off of the car looking for those numbers." The next day, they found a chassis number hiding where an elaborate rollcage was once attached. This raised more questions, like why was there a sophisticated rollcage residing in a local B/P race car? *Hmmmm.*

But soon the chassis number answered all the questions. This was a car missing from the Corvette roster of most wanted missing cars. It was the third Z06 built, and one of six lightweight racers built at GM for Zora Arkus-Duntov to battle the Cobras. But this one got sidetracked for the Challenge Cup race, with a Mystery Motor, double shocks up front, and other NASCAR-type modifications.

The discovery of the Corvette's special past would have been

where our story ends, had it not been for an auction announced by Smokey "Best Damn Garage in Florida" Yunick's shop in 1986. Yunick was clearing out some of the stuff collecting dirt and grime to get more room and some quick cash, and one of the items he was auctioning was a Mystery Motor—and not just any old Mystery Motor but what appears to be the only racing 427ci Mk II to have escaped Chevy's purging of all Mystery Motor racing efforts in 1964.

McIntyre had been on a quest to find all Mystery Motor-related info and parts in the hope he could someday replicate the car to the day it raced at Daytona, but in some ways he was looking for the Holy Grail. Talking with an ex-GM engineer with knowledge of Mystery Motors, he found there were two MKIIs built in early and late-November 1962; eight engines built in early January 1963 (of which McIntyre's appears to be one based on the casting date); and then a final 10 built in late-January—though some experts believe not all of these were ever actually assembled. Based on this and other subsequent information, the number "17" seems to be the most reliable amount of Mk II engines built, making McIntyre's dream almost impossible—until Smokey's auction.

The day of the auction, McIntyre decided to show up and take his best shot—and so did GM and Reggie Jackson. Once bidding started, it was fierce and swift—to the extent that the GM representatives quickly bid to their pre-approved limit. This meant they needed to call the Mothership to raise their limit, and while everyone waited, McIntyre suggested this was, after all, an auction. He had the highest bid, and if no one else was prepared to bid when the gavel fell, he should win the engine. The auctioneers reluctantly agreed, and with GM officials hovering around a pay phone, the gavel fell and McIntyre had himself a Mystery Motor for his Mickey Thompson Z06.

But not so fast. When it came time to pay Yunick, he invited McIntyre into his office and was really curious why the scholarly looking, neatly dressed McIntyre could possibly want what he just bought. Yunick got prickly. But after McIntyre casually told Yunick about his cars, his collection, and especially his Mickey Thompson Corvette, Yunick's demeanor changed and McIntyre was one of the good ol' boys.

By 2002, McIntyre found a picture of the car in race trim and had the car repainted in its more original silver with No. 3 on the doors. In the last few years, it has been invited to show at Bloomington, Illinois, and at the Corvette Museum in Bowling Green, Kentucky. The car has also been to Carlisle, Pennsylvania, for the city's celebration of Corvette racing history. Since then, it has been inducted into the Bloomington Great Hall as one of the most significant Corvettes of all time.

And that brings us up to right now, with the historic reunion of this car and its mystery motor. □



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87845606

WOW SUPER COUPON

2.5 HP, 21 GALLON 125 PSI VERTICAL AIR COMPRESSOR
CENTRAL PNEUMATIC
 LOT 67847 shown
 61454/61693/62803

SAVE \$70
\$149.99
 REG. PRICE \$219.99

87851459

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SUPER COUPON

MECHANIC'S GLOVES
NEW
MEDIUM
 LOT 62434
 62426

SAVE 60%
\$3.99
 REG. PRICE \$9.99

HARDY YOUR CHOICE!
LARGE
 LOT 62433
 62428

X-LARGE
 LOT 62432
 62429 shown

87853386

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SUPER COUPON

12,000 LB. ELECTRIC WINCH WITH REMOTE CONTROL AND AUTOMATIC BRAKE
BADLAND
 LOT 61256/60813
 61889/68142 shown

SAVE \$300
\$299.99
 REG. PRICE \$599.99

87850760

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WOW SUPER COUPON

RAPID PUMP® 1.5 TON ALUMINUM RACING JACK
PITTSBURGH
 • 3-1/2 Pumps Lifts Most Vehicles
 • Weighs 32 lbs.

SAVE \$60
 LOT 69252
 68053/62160
 62496/62516
 60569 shown

\$59.99
 REG. PRICE \$119.99

87844216

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SUPER COUPON

350 LB. CAPACITY SERVICE CART WITH LOCKING DRAWER
US GENERAL

SAVE \$92
 LOT 61161
 90428 shown

\$57.99
 REG. PRICE \$149.99

87844928

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SUPER COUPON

1/4" AIR ANGLE DIE GRINDER
CENTRAL PNEUMATIC
 LOT 62439/69945/32046 shown

SAVE 50%
\$9.99
 REG. PRICE \$19.99

87846630

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WOW SUPER COUPON

PITTSBURGH 2 TON FOLDABLE SHOP CRANE
 LOT 60388
 69514 shown

SAVE \$120
\$179.99
 REG. PRICE \$299.99

87847056

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SUPER COUPON

5 PIECE PLIERS SET
PITTSBURGH
 LOT 69352/69351 shown
 69353/62597/62598/62823

SAVE 55%
\$8.99
 REG. PRICE \$19.99

87849664

LIMIT 8 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 2/9/16. Limit one coupon per customer per day.

SUPER COUPON

MOVER'S DOLLY
HaulMaster
 LOT 60497/93888 shown
 61899/62399

SAVE 40%
\$8.99
 REG. PRICE \$14.99

87854455

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SUPER COUPON

PITTSBURGH 2000 LB. CAPACITY FOLDABLE ENGINE STAND
 LOT 69521/67015
 69522 shown

SAVE \$50
\$109.99
 REG. PRICE \$159.99

87856985

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Nationwide**

WOW SUPER COUPON

Customer Rating
★★★★★



**1/2" INDUSTRIAL QUALITY
SUPER HIGH TORQUE
IMPACT WRENCH**
LOT 62627
68424 shown

**AWARD
WINNING
QUALITY**

**SAVE
OVER
\$55**

• 700 ft. lbs.
Max. Torque

"Top of its Class in Quality
at a Really Great Price"
— Hot Bike Magazine

~~\$74.74~~
~~\$89.99~~ **REG. PRICE \$129.99**

87875480

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WOW SUPER COUPON

FREE

WITH ANY PURCHASE

**3-1/2" SUPER BRIGHT
NINE LED ALUMINUM
FLASHLIGHT**
LOT 69052 shown
69111/62522
62573

**\$6.99
VALUE**

LIMIT 1 - Cannot be used with other discount, coupon or prior purchase. Coupon good at our stores, HarborFreight.com or by calling 800-423-2567. Offer good while supplies last. Shipping & Handling charges may apply if not picked up in-store. Non-transferable. Original coupon must be presented. Valid through 2/9/16. Limit one FREE GIFT coupon per customer per day.

87876210

WOW SUPER COUPON

**2 PIECE VEHICLE
WHEEL DOLLIES**
PITTSBURGH
LOT 60343
67338 shown

**SAVE
37%**

\$49.99 **REG. PRICE \$79.99**

• 1500 lb. Capacity

87864103

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WOW SUPER COUPON

**RETRACTABLE
AIR HOSE REEL WITH
3/8" x 50 FT. HOSE**
LOT 93897 shown
69265/62344

**SAVE
\$90**

\$59.99 **REG. PRICE \$149.99**

87870637

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WOW SUPER COUPON

**12 TON
SHOP PRESS**
CENTRAL
MACHINERY
LOT 33497/60604 shown

**SAVE
\$100**

\$99.99 **REG. PRICE \$199.99**

• Pair of
Arbor Plates
Included

87874334

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WOW SUPER COUPON

4-1/2" ANGLE GRINDER
drillmaster
LOT 60625 shown
95578/69645

**SAVE
40%**

\$11.99 **REG. PRICE \$19.99**

87875841

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WOW SUPER COUPON

**44" 13 DRAWER
INDUSTRIAL QUALITY
ROLLER CABINET**
LOT 62744/69387
62270/62591
68784 shown

**SAVE
\$330**

\$369.99 **REG. PRICE \$699.99**

• Weighs
245 lbs.

87885200

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WOW SUPER COUPON

**CENTECH
AUTOMATIC
BATTERY FLOAT
CHARGER**
LOT 42292 shown
69594/69955

**SAVE
70%**

\$5.99 **REG. PRICE \$19.99**

87866413

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WOW SUPER COUPON

**4" x 36" BELT/
6" DISC SANDER**
LOT 62502
97181 shown

**SAVE
\$80**

\$59.99 **REG. PRICE \$139.99**

87869981

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WOW SUPER COUPON

**7500 PEAK/
13 HP (420 CC)
GAS GENERATORS**
LOT 68530
69671 shown

**SAVE
\$260**

\$539.99 **REG. PRICE \$799.99**

87861428

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WOW SUPER COUPON

**3 TON HEAVY DUTY
STEEL JACK STANDS**
LOT 38846 shown
69597/61196
62392

**SAVE
55%**

\$19.99 **REG. PRICE \$44.99**

87870734

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WOW SUPER COUPON

**6" SELF-VACUUMING
AIR PALM SANDER**
CENTRALPNEUMATIC
LOT 60628
98895 shown

**SAVE
66%**

\$19.99 **REG. PRICE \$59.99**

87866018

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WOW SUPER COUPON

**MECHANIC'S SHOP TOWELS
PACK OF 50**
LOT 46163 shown
69649/61878
61837

**SAVE
50%**

\$9.99 **REG. PRICE \$19.99**

87871366

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WOW SUPER COUPON

**1500 LB. CAPACITY
MOTORCYCLE LIFT**
PITTSBURGH
LOT 69995 shown
60536/61632

**SAVE
\$80**

\$69.99 **REG. PRICE \$149.99**

• Lift range: 5-1/2" to 17"

87868154

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WOW SUPER COUPON

**45 WATT
SOLAR
PANEL KIT**
LOT 62443
68751 shown

**SAVE
\$160**

\$139.99 **REG. PRICE \$299.99**

87872605

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WOW SUPER COUPON

**3 PIECE TITANIUM
NITRIDE COATED
HIGH SPEED STEEL
STEP DRILLS**
LOT 91616 shown
69087/60379

**SAVE
55%**

\$8.99 **REG. PRICE \$19.99**

87876489

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We Dyno Test 20 LS1 Intake Manifolds

Don't Even Think About Swapping Your LS Intake Until You Read This

Richard Holdener

► Is an intake manifold an important part of a performance LS build? The answer is, obviously, yes. One need only realize that the peak power difference between the least and most powerful intakes in this shootout was more than 60 hp. Imagine that, an intake swap that yielded 60 extra horsepower, but that isn't the whole story. While peak power gains offer enticing Internet banter, changes in the entire power curve are the real story. That is why we are also including average power production from 3,000 to 7,000 rpm, torque production at 4,000 rpm, cost, throttle opening, runner length, composition, and even what we liked and might change on each design. In short, this

was the most extensive LS intake manifold test ever devised.

Though we know you have already skipped ahead to the data, there are two important points to consider. The first is that no intake test, including this LS extravaganza, is absolute. Intake manifolds are combination specific, meaning that the ideal intake for an 8,000-rpm stroker combination would be different than one designed for a stock 4.8L truck motor. If you're looking for the "best" single intake on the market for every application—such an animal does not exist. This test should provide you info on what design might work best for your combo.

THE TEST ENGINE

Speaking of combos, our test motor was built to simulate your basic hot street-strip setup. The iron-block 6.0L featured a stock block and crank mixed with Carillo rods and CP flat-top pistons. The Comp 469 cam offered a 0.617/0.624-inch lift split, a 231/247-degree duration split and 113-degree LSA. Topping the 6.0L was a set of AFR

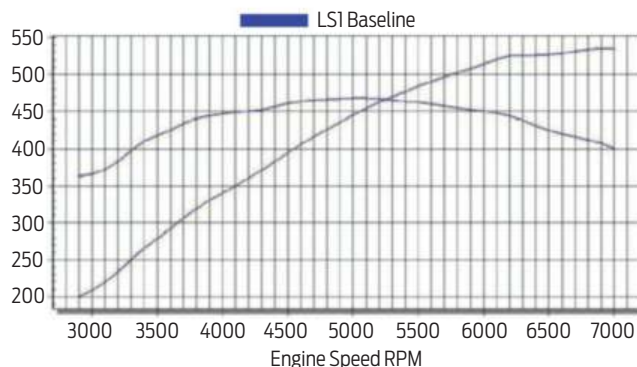
LSX 230 V2 heads. The various intakes were run with no less than eight different fuel rails, seven different throttle-bodies, and three different style injectors. Naturally, air/fuel, timing, and temperatures remained constant during testing. Check out the results to see how your favorite or future favorite fared.



STOCK LS1

EBAY PRICE	\$155
CONSTRUCTION	Composite
RUNNER LENGTH	11.0 in
THROTTLE OPENING	2.960 in
THROTTLE-BODY SIZE TESTED	Accufab 78mm
FUEL RAIL	Wilson billet
INJECTORS	Holley 75 lb
PEAK POWER	535 hp at 6,900 rpm
PEAK TORQUE	468 lb-ft at 5,100 rpm
AVE HP (3,000–7,000)	418.9 hp
AVE TQ (3,000–7,000)	438.6 lb-ft
TQ AT 4,000 RPM	446.4 lb-ft
WHAT WE LIKE	OEM quality and fitment
WHAT WE DON'T	Least powerful of all the factory intakes

[Our testing began with the LS intake that started it all, the LS1. Least powerful of all the factory offerings, the LS1 definitely limited the power output of our 6.0L test motor. Equipped with the factory LS1 intake and Accufab 78mm throttle-body, the 6.0L produced peak numbers of 535 hp and 468 lb-ft of torque. This curve was to serve as the baseline for the remainder of the LS intakes.

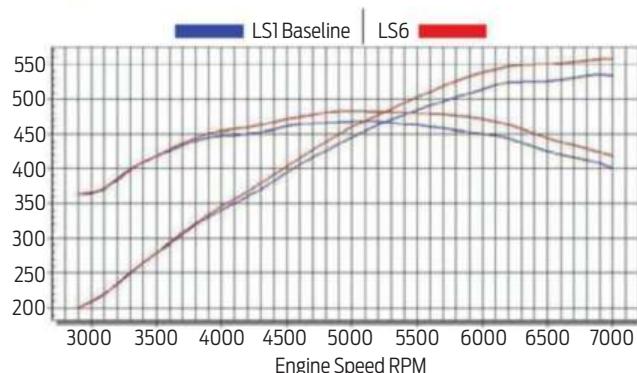




STOCK LS6

EBAY PRICE	\$195
CONSTRUCTION	Composite
RUNNER LENGTH	11.0 in
THROTTLE OPENING	2.960 in
THROTTLE-BODY SIZE TESTED	Accufab 78mm
FUEL RAIL	Wilson Billet
INJECTORS	Holley 75 lb
PEAK POWER	557 hp at 7,000 rpm
PEAK TORQUE	483 lb-ft at 5,000 rpm
AVE HP (3,000–7,000)	432.0 hp
AVE TQ (3,000–7,000)	450.9 lb-ft
TQ AT 4,000 RPM	454.3 lb-ft
WHAT WE LIKE	Factory fitment and better power than LS1
WHAT WE DON'T	Limited availability and elevated price

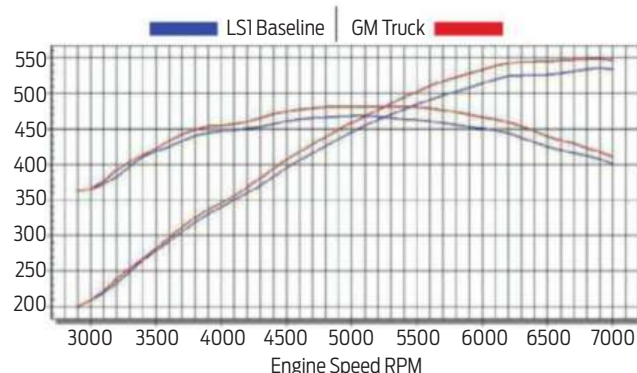
[First up was the LS6 intake. Designed as a factory upgrade for the LS1, the LS6 intake once again proved its reputation by significantly improving the power of our 6.0L. Compared to the LS1, the LS6 offered an additional 22 hp and 15 lb-ft of torque. The LS6 is harder to find and slightly more expensive than the LS1, but the power gains are worth it.



STOCK TRUCK

EBAY PRICE	\$80
CONSTRUCTION	Composite
RUNNER LENGTH	11.0 in
THROTTLE OPENING	2.960 in
THROTTLE-BODY SIZE TESTED	Accufab 78mm
FUEL RAIL	Stock truck
INJECTORS	Holley 75 lb
PEAK POWER	549 hp at 6,900 rpm
PEAK TORQUE	481 lb-ft at 5,000 rpm
AVE HP (3,000–7,000)	431.2 hp
AVE TQ (3,000–7,000)	450.8 lb-ft
TQ AT 4,000 RPM	454.5 lb-ft
WHAT WE LIKE	Availability and performance
WHAT WE DON'T	Ugly

[Naturally, we tested the factory truck intake, as GM made literally millions of trucks equipped with either the 4.8L, 5.3L, or 6.0L—all sharing the same intake. The popularity and price of 4.8L and 5.3L swaps means there are plenty of truck intakes to be had. Though the most affordable of all the factory offerings, the truck intake easily outperformed the LS1 by 14 hp and excelled at torque production, nearly matching the performance-oriented LS6. The average horsepower and torque production for the truck intake bested the LS1 and matched the high-powered LS6, making the truck intake a good choice for many applications.

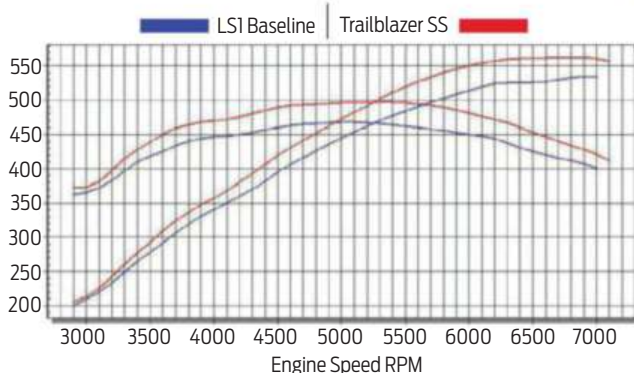




STOCK TRAILBLAZER SS

EBAY PRICE	\$210
CONSTRUCTION	Composite
RUNNER LENGTH	9.5 in
THROTTLE OPENING	3.45 in
THROTTLE-BODY SIZE TESTED	FAST 90 mm
FUEL RAIL	FAST (modified mounts)
INJECTORS	Holley 75 lb
PEAK POWER	562 hp at 7,000 rpm
PEAK TORQUE	497 lb-ft at 5,000 rpm
AVE HP (3,000–7,000)	444.4 hp
AVE TQ (3,000–7,000)	464.6 lb-ft
TQ AT 4,000 RPM	469.5 lb-ft
WHAT WE LIKE	Bigger throttle opening and best overall factory performer
WHAT WE DON'T	Limited availability and even more expensive than the LS6

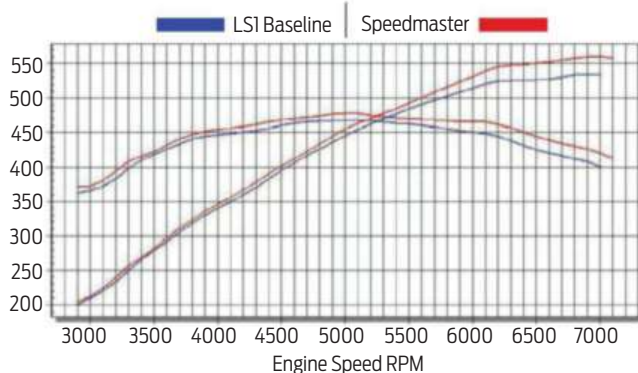
[Apparently, the GM engineers sharpened their power pencils when designing the intake for the Trail Blazer SS (TBSS), as this was not only the most powerful factory intake but outperformed the LSI from top to bottom. Unlike the LS6 that matched the power of the LSI down low (then took off), the TBSS intake offered more power and torque everywhere. By making more torque than the truck intake and more power than the LS6, the TBSS offered the best of both worlds.



SPEEDMASTER

RETAIL PRICE	\$220
CONSTRUCTION	Cast aluminum
PART NUMBER	PCE-148.1007
RUNNER LENGTH	8.5 in
THROTTLE OPENING	3.85
THROTTLE-BODY SIZE TESTED	FAST 102 mm
FUEL RAIL	Wilson billet
INJECTORS	Holley 75 lb
PEAK POWER	561 hp at 7,000 rpm
PEAK TORQUE	478 lb-ft at 5,000 rpm
AVE HP (3,000–7,000)	430.2 hp
AVE TQ (3,000–7,000)	449.5 lb-ft
TQ AT 4,000 RPM	453.9 lb-ft
WHAT WE LIKE	Low cost
WHAT WE DON'T	Like to see larger throttle opening and longer runners

[Stepping into aftermarket cast-aluminum intake offerings, the Speedmaster intake offered shorter (and larger) runners than the LSI as well as a larger throttle opening. The power gains were most consistent at the top of the rev range, but like the factory truck manifold, the Speedmaster even offered additional torque down low. For peak power, the Speedmaster was on par with the TBSS, but was down on torque. Something we really liked about the Speedmaster unit was, at \$220, it could be purchased for little more than the factory TBSS intake. The cost and power made it a desirable alternative to the factory LSI intake.



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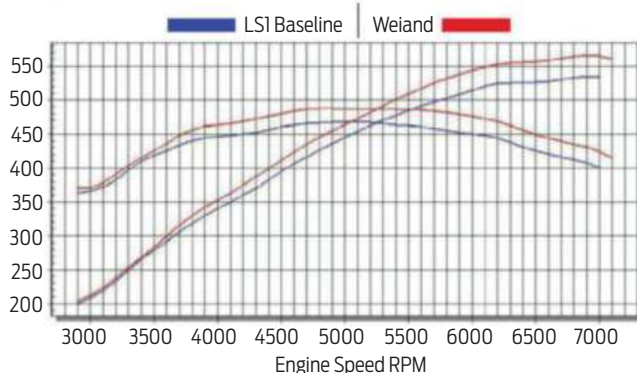
800.754.6920



WEIAND

RETAIL PRICE	\$519
CONSTRUCTION	Cast aluminum
PART NUMBER	300-111
RUNNER LENGTH	11.5 in
THROTTLE OPENING	3.030
THROTTLE-BODY SIZE TESTED	Accufab 78mm
FUEL RAIL	Wilson billet
INJECTORS	Holley 75 lb
PEAK POWER	566 hp at 6,900 rpm
PEAK TORQUE	487 lb-ft at 4,900 rpm
AVE HP (3,000-7,000)	438.3 hp
AVE TQ (3,000-7,000)	457.7 lb-ft
TQ AT 4,000 RPM	463.7 lb-ft
WHAT WE LIKE	Ease of installation
WHAT WE DON'T	Small throttle opening and weight of cast-aluminum manifolds vs. composite

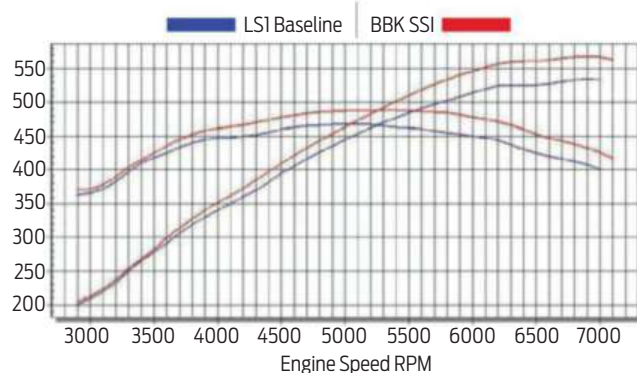
[The Weiand intake has been with us for years and continues to be a solid performer. The Weiand handily outperformed not only the LS1 but all of the factory manifolds, including the Trail Blazer SS. Like the Speedmaster, the torque was down compared to the Trail Blazer SS manifold, but we soon discovered that only two other intakes would best the peak torque offered by the impressive Trail Blazer SS. An extra 31 hp more than the LS1 is a hefty chunk of power and shows just how limiting the factory manifold can be on a modified 6.0L.



BBK SSI

RETAIL PRICE	\$499
CONSTRUCTION	Cast aluminum
PART NUMBER	5004
RUNNER LENGTH	10.0 in
THROTTLE OPENING	3.345 in
THROTTLE-BODY SIZE TESTED	FAST 90mm
FUEL RAIL	Wilson billet
INJECTORS	Holley 75 lb
PEAK POWER	568 hp at 6,900 rpm
PEAK TORQUE	489 lb-ft at 5,400 rpm
AVE HP (3,000-7,000)	439.2 hp
AVE TQ (3,000-7,000)	458.2 lb-ft
TQ AT 4,000 RPM	462.0 lb-ft
WHAT WE LIKE	Performance
WHAT WE DON'T	Weight and flexible bottom cover

[The BBK was the final cast-aluminum, long-runner intake we tested, and it performed very well. With peak numbers of 568 hp and 489 lb-ft of torque, the SSI intake offered a solid combination. The BBK intake also looked the part, though a splash of black would really wake it up visually. Compared to the LS1, the SSI intake offered slightly more torque down low and shined as revs increased.



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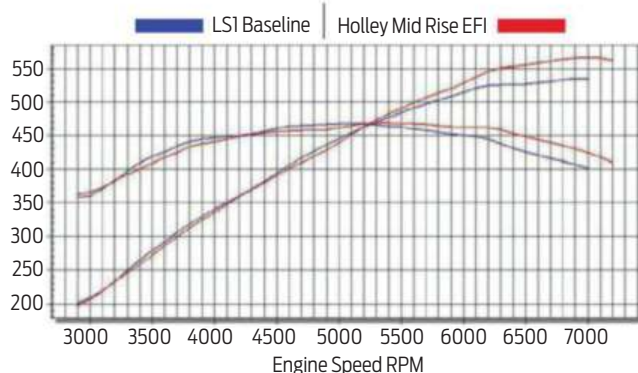




HOLLEY MID RISE EFI

RETAIL PRICE	\$647
CONSTRUCTION	Cast aluminum
PART NUMBER	300-126
RUNNER LENGTH	5.00 in
THROTTLE OPENING	3.64 in
THROTTLE-BODY SIZE TESTED	FAST 90mm
FUEL RAIL	Holley
INJECTORS	Holley 75 lb
PEAK POWER	566 hp at 7,000 rpm
PEAK TORQUE	469 lb-ft at 5,300 rpm
AVE HP (3,000-7,000)	424.9 hp
AVE TQ (3,000-7,000)	442.4 lb-ft
TQ AT 4,000 RPM	441.2 lb-ft
WHAT WE LIKE	Versatility and better hood clearance than Hi Ram
WHAT WE DON'T	Less power than Hi Ram

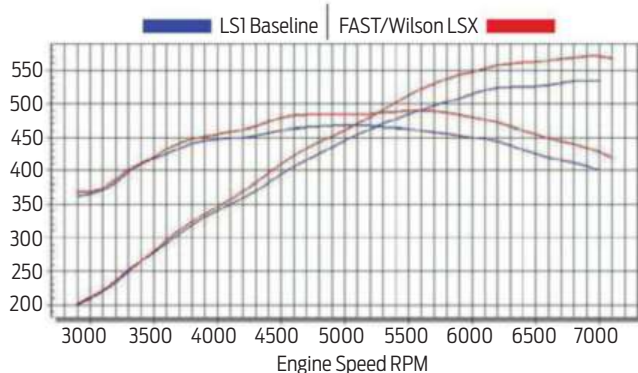
Though the design differed from the other long-runner, aluminum versions of production manifolds, we grouped the Holley Mid Rise with the Weiland, BBK, and Speedmaster intakes. The Mid Rise offered improved hood clearance compared to the Hi Ram, but the power gains were nowhere near as significant. Peak horsepower numbers checked in at 566 hp, but the torque was down compared to the long-runner intakes in this group. Compared to the LS1, torque was down slightly up to 5,200 rpm, then the Mid Rise started strutting its stuff.



FAST/WILSON LSX

EBAY PRICE	\$525
CONSTRUCTION	Composite
RUNNER LENGTH	12.0 in
THROTTLE OPENING	3.060 in
THROTTLE-BODY SIZE TESTED	FAST 78mm
FUEL RAIL	Wilson billet
INJECTORS	Holley 75 lb
PEAK POWER	571 hp at 7,000 rpm
PEAK TORQUE	490 lb-ft at 5,600 rpm
AVE HP (3,000-7,000)	438.5 hp
AVE TQ (3,000-7,000)	457.0 lb-ft
TQ AT 4,000 RPM	455.1 lb-ft
WHAT WE LIKE	The originator with plenty of performance
WHAT WE DON'T	Small throttle opening and now takes a backseat to the LSXR versions

We had this original FAST/Wilson LSX intake laying around the shop, so we included it in the test. This intake started the composite revolution, and we'd like to know how many were sold to LS enthusiasts before they upgraded to the LSXR versions. This intake has never failed to impress with power gains over the LS1 (and LS6). Despite sharing the same throttle opening, this early FAST offered an additional 36 hp more than the LS1 and 14 hp more than the LS6.



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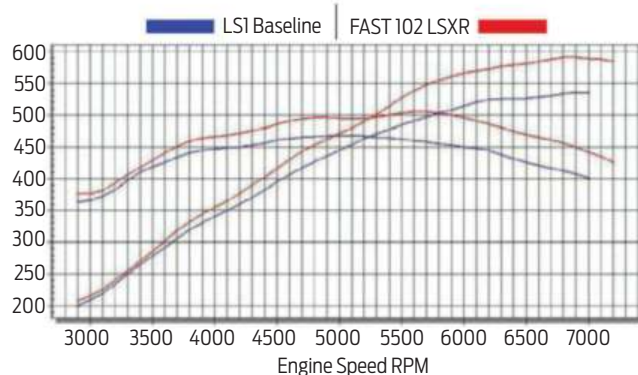
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FAST LSXR 102MM

RETAIL PRICE	\$951
CONSTRUCTION	Composite
PART NUMBER	146302
RUNNER LENGTH	10.5 in
THROTTLE OPENING	3.970 in
THROTTLE-BODY SIZE TESTED	FAST 102mm
FUEL RAIL	FAST
INJECTORS	FAST 75 lb
PEAK POWER	591 hp at 6,900 rpm
PEAK TORQUE	505 lb-ft at 5,700 rpm
AVE HP (3,000-7,000)	450.0 hp
AVE TQ (3,000-7,000)	468.4 lb-ft
TQ AT 4,000 RPM	466.4 lb-ft
WHAT WE LIKE	Impressive overall power and torque curves
WHAT WE DON'T	Cost

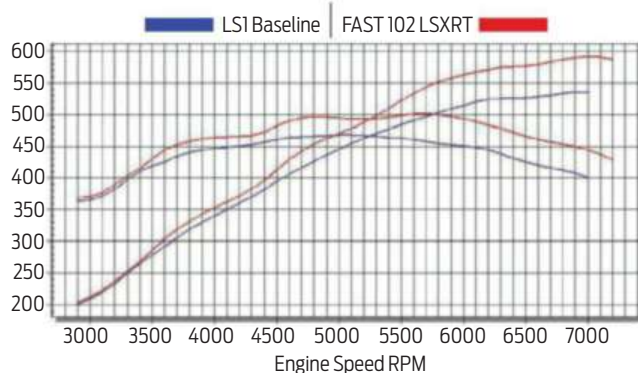
[Things got serious when we installed the 102mm FAST LSXR (it also offers a 92mm version that would be about 10 to 12hp down). Equipped with the LSXR, the modified 6.0L produced 591 hp and 505 lb-ft of torque. The FAST intake offered impressive peak power and the highest torque production of any of the intakes tested. Though some of the shorter runner intakes made slightly more peak power, it is hard to beat this long-runner design for average power production.



FAST LSXRT 102MM

RETAIL PRICE	\$999
CONSTRUCTION	Composite
PART NUMBER	146602
RUNNER LENGTH	10.5 in
THROTTLE OPENING	3.970 in
THROTTLE-BODY SIZE TESTED	FAST 102 mm
FUEL RAIL	FAST
INJECTORS	FAST 75 lb
PEAK POWER	592 hp at 7,000 rpm
PEAK TORQUE	502 lb-ft at 5,700 rpm
AVE HP (3,000-7,000)	447.8 hp
AVE TQ (3,000-7,000)	466.0 lb-ft
TQ AT 4,000 RPM	464.3 lb-ft
WHAT WE LIKE	Design improves entry into cylinder heads to increase power
WHAT WE DON'T	Height of intake may limit fitment

[Theoretically, the straight runners in the 102mm LSXRT should improve power production, but the RT version managed to squeak past the (low profile) LSXR by just 1 hp. The two traded torque production, with the LSXR coming out on top 505 lb-ft to 502 lb-ft for the RT. Still, the LSXRT offered an impressive 57 hp and 34 lb-ft of torque more than the LS1.



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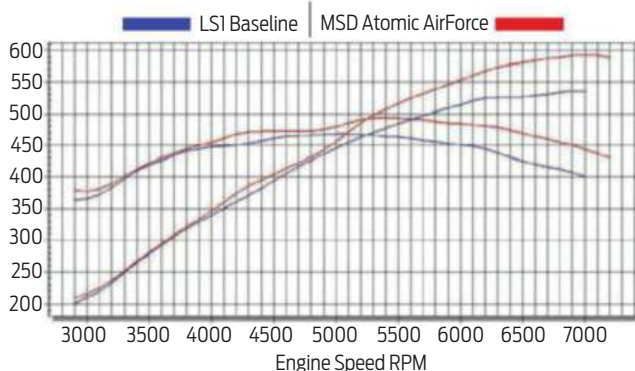




MSD ATOMIC AIRFORCE

RETAIL PRICE	\$949
CONSTRUCTION	Composite
PART NUMBER	2702
RUNNER LENGTH	8.5 in
THROTTLE OPENING	4.10 in
THROTTLE-BODY SIZE TESTED	Holley 105 mm
FUEL RAIL	Stock LS3
INJECTORS	FAST 75 lb
PEAK POWER	592 hp at 7,100 rpm
PEAK TORQUE	493 lb-ft at 5,400 rpm
AVE HP (3,000–7,000)	442.4 hp
AVE TQ (3,000–7,000)	460.0 lb-ft
TQ AT 4,000 RPM	454.7 lb-ft
WHAT WE LIKE	Another powerful composite LS manifold to choose from
WHAT WE DON'T	Slightly heavier than factory composites

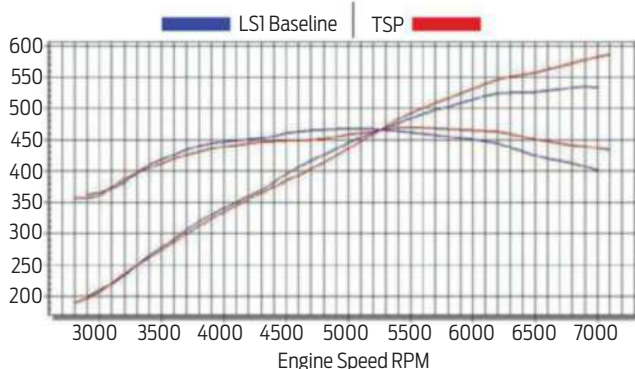
[We were excited about testing the new Atomic intake, as the FAST has all but ruled the roost for aftermarket composite intakes. The new Airforce intake demonstrated that the MSD designers brought their A game. Equipped with the new Atomic, the 6.0L pumped out 592 hp and 493 lb-ft of torque. With these results, obviously, the Atomic must be viewed as a serious player. Now we need to see how much boost it will take.



TOP STREET PERFORMANCE (TSP)

RETAIL PRICE	\$700
CONSTRUCTION	Fabricated aluminum
PART NUMBER	81001
RUNNER LENGTH	5.5 in
THROTTLE OPENING	4.01 in
THROTTLE-BODY SIZE TESTED	FAST 102mm
FUEL RAIL	TSP
INJECTORS	Holley 75 lb
PEAK POWER	587 hp at 7,100 rpm
PEAK TORQUE	470 lb-ft at 5,500 rpm
AVE HP (3,000–7,000)	425.6 hp
AVE TQ (3,000–7,000)	442.8 lb-ft
TQ AT 4,000 RPM	439.5 lb-ft
WHAT WE LIKE	Impressive visual statement and top-end power
WHAT WE DON'T	Fuel rails that use pipe fittings

[This intake from TSP sure looked the part—we suspect many LS owners will buy this product based on looks alone—but we wondered how well the short-runner design worked on a typical street/strip motor. Like the single-plane, carbureted intakes we tested, this piece from TSP offered short intake runners designed to promote power production higher in the rev range, and that is exactly what it did. The short runner lost out in torque production to the LS1 at less than 5,300 rpm, then pulled away strongly thereafter, peaking at 587 hp (a gain of 52 hp).



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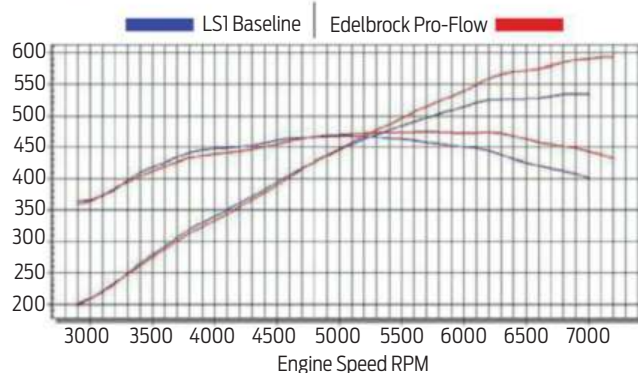
Ranger
PRODUCTS



EDELBROCK PRO-FLOW

RETAIL PRICE	\$587
CONSTRUCTION	Cast aluminum
PART NUMBER	71393
RUNNER LENGTH	6.25 in
THROTTLE OPENING	3.55 in
THROTTLE-BODY SIZE TESTED	FAST 90mm (and Edelbrock 90mm)
FUEL RAIL	Edelbrock
INJECTORS	Holley 75 lb
PEAK POWER	593 hp at 7,000 rpm
PEAK TORQUE	474 lb-ft at 5,700 rpm
AVE HP (3,000-7,000)	431.6 hp
AVE TQ (3,000-7,000)	448.3 lb-ft
TQ AT 4,000 RPM	438.7 lb-ft
WHAT WE LIKE	Looks/performs great and casting ensures no boost/vacuum leaks
WHAT WE DON'T	Doesn't use LS throttle-body pattern

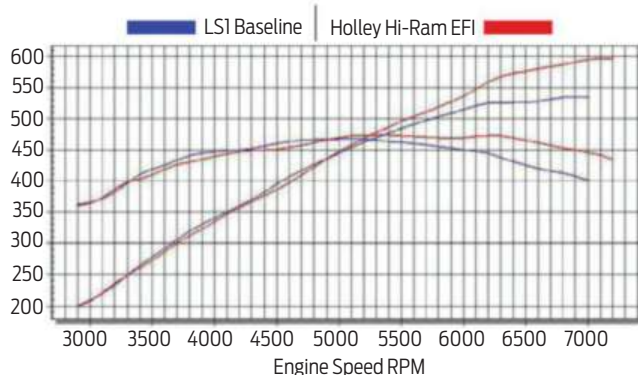
The Edelbrock Pro-Flow shared the tunnel-ram design with the TSP and Holley Hi-Ram, but the runners were slightly longer than the TSP. The Edelbrock showed the effectiveness of this design by offering 593 hp (a gain of 58 hp) and 474 lb-ft of torque (up 6 lb-ft). Like the TSP, the Edelbrock was down compared to the LSI below 4,700 rpm, but pulled away handily thereafter.



HOLLEY HI-RAM EFI

RETAIL PRICE	\$724
CONSTRUCTION	Cast aluminum
PART NUMBER	300-123
RUNNER LENGTH	6.50 in
THROTTLE OPENING	4.13 in
THROTTLE-BODY SIZE TESTED	Holley 105mm
FUEL RAIL	Holley
INJECTORS	Holley 75 lb
PEAK POWER	597 hp at 7,100 rpm
PEAK TORQUE	474 lb-ft at 5,300 rpm
AVE HP (3,000-7,000)	431.4 hp
AVE TQ (3,000-7,000)	448.0 lb-ft
TQ AT 4,000 RPM	439.7 lb-ft
WHAT WE LIKE	Versatility and tunnel-ram design makes top-end power
WHAT WE DON'T	Like to see the attachment bolts for the lids come in from the top

The Hi-Ram EFI was the horsepower king in this test, though by a scant 4 hp more than the Edelbrock Proflow (597 hp versus 593). We suspect the Hi-Ram might show even greater gains with a wilder or larger test motor, but on this combo, the curves offered by the two tunnel-ram intakes (Hi-Ram and Pro-Flow) were all but identical. Like the others, the short-runner Hi-Ram traded torque below 4,700 rpm to the LS1, but motored away on the big end.





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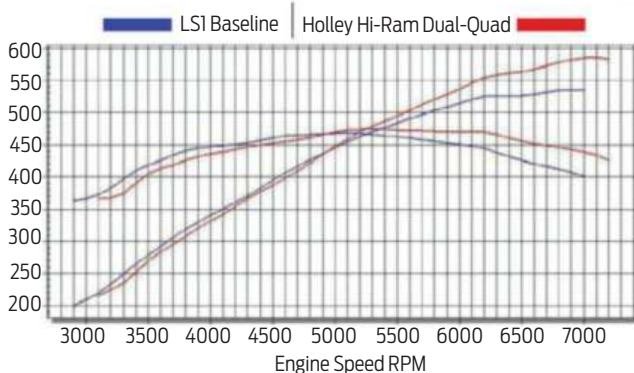
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HOLLEY HI-RAM CARB

RETAIL PRICE	\$635
CONSTRUCTION	Cast aluminum
PART NUMBER	300-115
RUNNER LENGTH	6.50 in
CARBS	Dual Holley 950 XPs
PEAK POWER	586 hp at 7,100 rpm
PEAK TORQUE	475 lb-ft at 5,300 rpm
AVE HP (3,000-7,000)	433.3 hp*
AVE TQ (3,000-7,000)	446.0 lb-ft*
TQ AT 4,000 RPM	435.6 lb-ft
WHAT WE LIKE	Dual quads sticking through a hole in the hood attract attention
WHAT WE DON'T	Sometimes unwanted attention

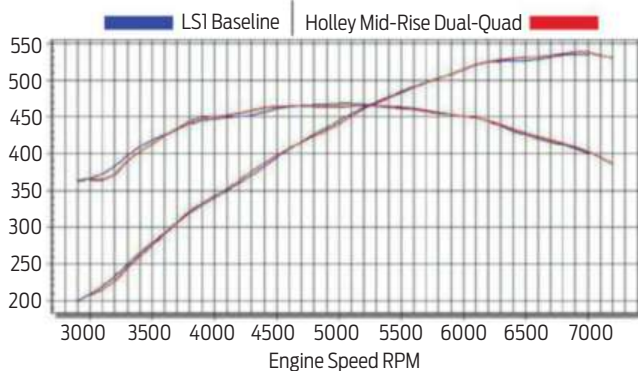
[Since the Holley Hi-Ram was offered with different tops, we tested it again with a dual-quad-top equipped with a pair of Holley 950 HP carbs. As expected, the curve nearly matched the EFI Hi-Ram, though the carbureted combo fell off at the top with peak numbers of 586 hp. Torque was up by 1 lb-ft with a peak of 475 lb-ft. The carbureted Hi-Ram showed once again that short runners excel at power production higher in the rev range than the factory LSI.



HOLLEY MID-RISE CARB

RETAIL PRICE	\$321
CONSTRUCTION	Cast aluminum
PART NUMBER	300-120
RUNNER LENGTH	5.00 in
CARBS	Dual 600-cfm 4160
PEAK POWER	538 hp at 6,900 rpm
PEAK TORQUE	465 lb-ft at 5,200 rpm
AVE HP (3,000-7,000)	419.0 hp
AVE TQ (3,000-7,000)	438.3 lb-ft
TQ AT 4,000 RPM	450.1 lb-ft
WHAT WE LIKE	Perfect for dual-quad LS swap
WHAT WE DON'T	4160 carbs limit tuning

[We also ran the Holley Mid-Rise in carbureted trim, though the dual-carb Mid-Rise was a more significant change in the intake design than the simple lid swap on the Hi-Ram. The Mid-Rise required an intermediate section between the dual-quad lower and lid, which extended the runners slightly on the EFI version. The dual-quad-carbureted intake was run with a pair of 4160 carbs that lacked secondary metering blocks for jetting. The carbureted combo looked impressive and managed to match the LSI for torque and horsepower.



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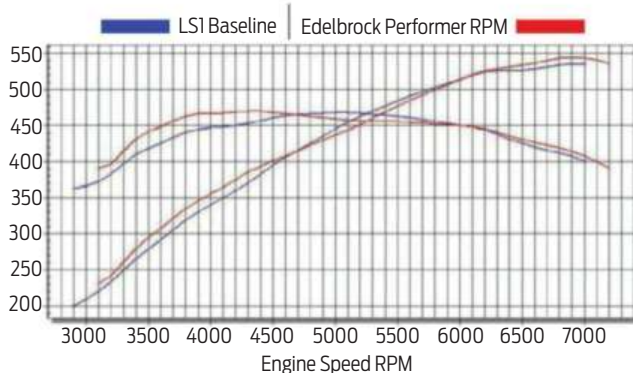
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EDELBROCK PERFORMER RPM

RETAIL PRICE	\$299
CONSTRUCTION	Cast aluminum
PART NUMBER	71187
DESIGN	Dual Plane
RUNNER LENGTH(S)	6.00/8.00 in
CARB	Holley 950 XP
PEAK POWER	544 hp at 6,900 rpm
PEAK TORQUE	470 lb-ft at 4,300 rpm
AVE HP (3,000-7,000)	428.7 hp*
AVE TQ (3,000-7,000)	446.6 lb-ft*
TQ AT 4,000 RPM	466.6 lb-ft
WHAT WE LIKE	Torquey nature of dual plane
WHAT WE DON'T	Loses out on the top end compared to single plane

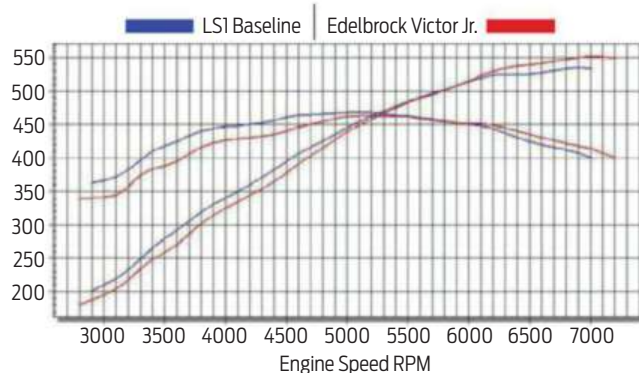
[The dual-plane Performer RPM showed its torquey nature by bettering the long-runner LSI at less than 4,600 rpm. The dual-plane also offered more power at speeds of more than 6,300 rpm, but the LSI was slightly better between those two extremes. This intake combo showed there was plenty of power for swap candidates who elect to run their LS with carburetion.



EDELBROCK VICTOR JR.

RETAIL PRICE	\$370
CONSTRUCTION	Cast aluminum
PART NUMBER	28457
DESIGN	Single plane
RUNNER LENGTH(S)	4.50/7.50 in
CARB	Holley 950 XP
PEAK POWER	552 hp at 7,000 rpm
PEAK TORQUE	463 lb-ft at 5,200 rpm
AVE HP (3,000-7,000)	413.4 hp
AVE TQ (3,000-7,000)	429.6 lb-ft
TQ AT 4,000 RPM	426.6 lb-ft
WHAT WE LIKE	Simplicity of carburetion
WHAT WE DON'T	Loss of torque inherent in single-plane design

[As expected, the single-plane Victor Jr. offered more peak power than the LS1, but the downside was that (unlike the dual-plane) power production suffered below 5,500 rpm. Like the tunnel-ram intakes, the single-plane design featured short runners, but where the tunnel-ram intakes offered the same runner length for all eight cylinders (for even power production), the single-plane featured four long(er) and four short(er) runners. This optimized power production from one set of four cylinders at a different rpm than the other.

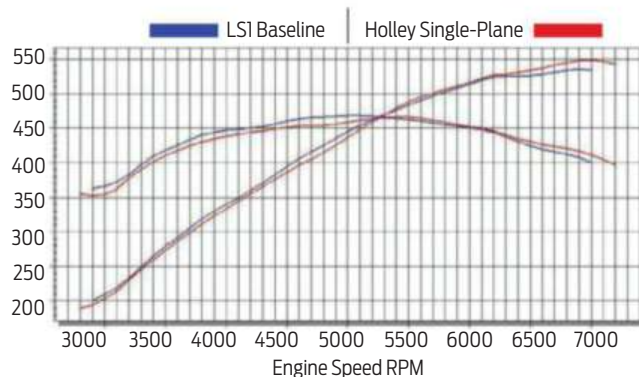




HOLLEY SINGLE PLANE

RETAIL PRICE	\$252
CONSTRUCTION	Cast aluminum
PART NUMBER	300-132
DESIGN	Single plane
RUNNER LENGTH(S)	5.00/7.50 in
CARB	Holley 950 XP
PEAK POWER	549 hp at 7,000 rpm
PEAK TORQUE	466 lb-ft at 5,500 rpm
AVE HP (3,000-7,000)	417.3 hp
AVE TQ (3,000-7,000)	436.0 lb-ft
TQ AT 4,000 RPM	438.7 lb-ft
WHAT WE LIKE	Offered good torque for a single plane
WHAT WE DON'T	Still typical trade-off in low speed for top-end power

[Though similar in design to the Victor Jr., the Holley single-plane intake offered slightly better torque than the Edelbrock, but slightly less peak power. The question now is, would you trade the extra 24 lb-ft down low for a loss of 3 hp at the top?



Sources

AFR; Valencia, CA; 877.892.8844; AirFlowResearch.com

ARP; Ventura, CA; 800.826.3045; ARP-Bolts.com

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BBK; Temecula, CA; 951.296.1771; BBKperformance.com

BRIAN TOOLEY RACING;
888.959.8335; BrianTooleyRacing.com

COMP CAMS;
Memphis, TN; 901.795.2400; CompCams.com

CP PISTONS/CARRILLO RODS;
Irvine, CA; 949.567.9000; CP-Carrillo.com

EBAY; San Jose, CA; 800.322.9266; eBay.com

EDELBROCK; Torrance, CA; 310.781.2222; Edelbrock.com

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HOLLEY/HOOKER/WEIAND;
Bowling Green, KY; 270.782.2900; Holley.com

LUCAS OIL; Corona, CA; 800.342.2512; LucasOil.com

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[As we go to press, Chevrolet has just announced the ZZ6, the latest member of its 350 "ZZ" crate-engine family. Fast Burn heads, beehive valvesprings, and a single-plane high-rise intake raise the official power rating to 405 hp and 405 lb-ft. This is the "turnkey" version, which adds a complete serpentine accessory drive package, a cast-iron "long" water pump, an HEI distributor, a flexplate, a Holley 770-cfm carb, red spark-plug wires, and a black air cleaner and valve covers embossed with the Chevrolet Bow Tie logo.

► Twenty-five years ago, there were no crate engines as we know them today. True, one could buy an "engine in a crate" from your local GM dealer, but these were either current production engines or (in some cases) stockpiled high-performance mills left over from the muscle-car era. There were limited new runs of long- and short-block, classic-era Chevrolet small- and big-block engines from time to time—as long as the original castings and tooling were still available at the engine assembly plant so they could be run down the same production line as current model-year motors with only minimal disruption. By the mid-1980s, the small-block had evolved from its original configuration. The production plants were now set up for one-piece rear main seal blocks, roller cams, guided rocker arms, and center-bolt valve covers; they were no longer capable of producing and assembling original LT1 or L82 high-performance engines. The original parts supply of classic-era cylinder heads and two-piece rear main-seal forged cranks was also drying up.

On the other hand, after a lost decade of dismal new-car performance offerings, original-equipment (OE) power was finally on the upswing. Although they had originally been introduced for mileage and emissions reasons, hydraulic-roller cams offered the potential for significant performance gains, and aluminum heads were now standard equipment on Corvettes. The large volumes inherent in standard production engines brought the price down to the point that such previously exotic technologies could be made available to hot rodders at an affordable cost.

So rather than continue to offer the increasingly obsolete (and ever more expensive) old-school engine assemblies, Chevrolet decided to step up and spec an all-new, high-performance engine assembly compatible with current production tooling. Unlike previous offerings, it would not be a copy of a current production motor (which, after all, were all fuel injected with mild, fuel-mileage-enhancing cam profiles). Instead, the new mill was a real carbureted hot rod engine that blended the best of old and new technology. The new motor was officially called the "H.O. 350," and the engine code stamped at the engine plant on the block pad located in front of the passenger-side cylinder head was assigned engine code "ZZZ."

In retrospect, we now know the ZZZ's release marked the dawn of modern crate engines. GM's ZZ 350 small-block family started and won the crate engine wars between Chevy, Ford, and Chrysler. Yes, there were and are more powerful and larger crate engines, but no one would go on to build and sell more performance small-block

crate motors than GM. In so doing, it would revolutionize the hot rod engine market; in many cases, it is now cost-competitive to buy a fully assembled, brand-new crate engine (complete with factory warranty) than to scratch-build an equivalent engine at home from parts. Arguably, the ZZ also led to the mainstream acceptance of hydraulic-roller cams and aluminum cylinder-heads on street hot rod engines.

ZZZ

ZZZ engines were first made available for sale in April 1989. As originally configured, the engine had four-bolt mains, a forged one-piece rear main seal crankshaft, L98 Corvette aluminum cylinder heads, and a nominal 9.8:1 static compression ratio. The pistons were hypereutectic high-silicon alloy pistons with "on-center" piston pins that became well-known for their signature piston slap (knock) when cold. However, Chevy did spec 1970-era Z28/LT1 forged "pink" connecting rods that were said to have better bolts and more "prequalification" (including magnetic particle-inspection and shot-peening) than the current (albeit visually similar) OE assembly-line rods. Spun by a single-roller timing chain, the ZZZ's hydraulic-roller cam was a single-pattern profile ground on a 114-degree lobe-separation angle (LSA), with 235-degrees duration (at 0.050-inch tappet-lift) and 0.480-inch valve lift (with 1.5:1 rocker arms). The engine was topped off with the factory-style Z28/LT1 aluminum, dual-plane, high-rise intake manifold that accepted standard 4150-type Holley (square-flange) carburetors. These engines were originally rated at 345 hp at 5,600 rpm and 370 lb-ft of torque at 3,600. In 1990, you could buy one for about \$2,500 at performance dealers like John Elway Chevrolet.

ZZ1 AND ZZZ

The ZZZ was already becoming well known, so design revisions have maintained a similar engine code ever since. The follow-on ZZ1s and ZZ2s were very similar to the original ZZZ, except for a second-design piston that featured "off-center" pins to quiet the nasty cold-start piston-slap problem. Unfortunately, the roller chain was downgraded to a butt-link chain. There were some minor valve-cover changes and revisions to the intake manifold. Power and torque ratings remained unchanged.

ZZ3

The first really significant changes occurred with the late-1992 introduction of the ZZ3. The high-rise intake manifold was replaced

with a lower-rise intake machined with a dual-pattern carb-mounting flange that accepted both Holley square-flange carburetors as well as Rochester Q-jet spread bores while providing additional hood clearance. Ground with 208/221 degrees duration (at 0.050-inch tappet lift), 0.474/0.510-inch valve lift, and 112-degree centers and once again spun by a roller chain, the ZZ3's new dual-pattern, hydraulic-roller camshaft teamed with the new intake to improve mid-range torque. The ZZ3 generated the same peak power and torque numbers as its ZZ forebears, but at a more street-tractable rpm, the peak 345 hp now occurring at 5,250 rpm, with 387 lb-ft on tap at 3,250 rpm.

The heads received radiused valve seats for improved flow, reduced-mass valvespring retainers that lowered valvetrain weight, and improved valve-stem seals that added more clearance for compatibility with the new cam profile's higher valve lift. Other enhancements included an 8-inch torsional damper in place of the previous 6.75-inch-od unit, an oil-pan windage tray, and (starting in 1995) new powdered-metal connecting rods.

ZZ4

Appearing in mid-1996, the ZZ4 would become the longest-lived ZZ engine, remaining in production through 2014. There were several running changes during its long production run that spanned the phaseout of the classic small-block in favor of the totally new LS engines. When initially introduced, the ZZ4 really benefited from the then-contemporary LT1/LT4 Gen II small-block engine. The pistons were upgraded to the lightweight flat-top Mahle design with metric rings used on OE LT4 engines, boosting compression to 10:1. The ZZ4's upper valvetrain featured an enhanced valvespring package incorporating



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01 The motor that founded a dynasty—the original ZZZ—debuted in 1989. By 1990, we knew Chevy was on to something, with HOT ROD proclaiming it “Best New Product” of the year. But even we had no inkling how successful and long-lasting the ZZ series would become. The Z28-style, high-rise, dual-plane, Holley-flanged intake was standard on ZZZ, ZZ1, and ZZ2 versions.

02 The ZZ3's new low-rise intake cleared the hood on third-generation Camaros and Firebirds. It served as the basis for developing another historic first: an emissions-compliant crate motor. The fully California smog-legal retrofit kit replaced anemic 1982–1987 Camaro LG4 305 engines.

03 By far the best known and most numerous variant, the ZZ4 remained in production 18 years, from 1996 through 2014. Externally, there's little to distinguish it from its immediate predecessors. Internally, there were significant durability enhancements and minor tweaks that raised rated output to 355 hp and 405 lb-ft.

04 Used on ZZ3 and ZZ4 motors, a new low-rise intake came machined for both Holley and Rochester Q-jet carbs. The earlier high-rise intake accepted only Holleys. When combined with the ZZ3's new cam profile, the revised package generated the same peak power and torque numbers as the predecessor motors, but at a lower rpm.

05 Prior to the ZZ5, all ZZ motors used aluminum heads based on the OE 1986–1990 Corvette L98 casting with conventional, 163cc intake ports, slightly raised D-shaped exhaust ports, 58cc combustion chambers, and 1.94/1.50-inch valves. They were very affordable due to their mass-production heritage.

06 ZZ engines have hydraulic-roller cams with lifters retained by dogbones and spiders. This is the ZZ5 valley (note the new Fast Burn heads' dual conventional/Vortec-intake flange bolt pattern). ZZ4 through ZZ6 mills still use the ZZ3's dual-pattern cam. The LS-style lifter gloves (GM PN 88958652) aren't included on ZZ engines; they were a dyno-test add-on for quicker cam changes.



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✓Yes



xNo



✓Yes



✓Yes



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the lightweight LT4 ovate-wire, 1.340-inch-od single valvespring that upped seat pressure and had even lighter retainers than those used on ZZ3 engines. This cured the ZZ3's occasional valvespring failures caused by that engine's higher acceleration-rate cam profile.

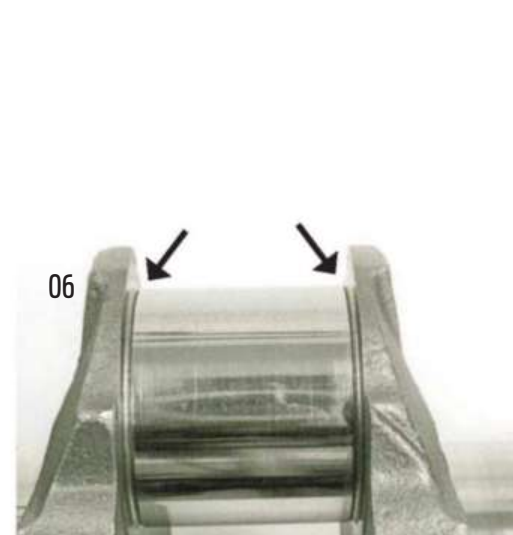
Through 2004 ZZ engines had always been sold as long-block assemblies, leaving it to the consumer to fully dress the motor. In 2005, an optional "turnkey assembly" was introduced that included everything—even front accessory drives—needed to get the motor up and running. Official published power numbers varied over the years, but the most common rating was 355 hp and 405 lb-ft, a welcome improvement over previous ZZ motors.

ZZ5 AND ZZ6

By 2014, the ZZ4 was showing its age. In particular, the old Corvette-based L98 heads were obsolete by 21st-century standards.

The huge economies of scale that had kept their price down were no longer relevant for

a basic head design not seen on a production car since 1990. It was time for a long-overdue update. For the ZZ5, GM picked free-flowing GM Fast Burn aluminum cylinder heads evolved from the best of GM LT4 and Vortec technology that had taller, larger intake runners and larger valves. New ultra-lightweight beehive springs and retainers offered greater valve control while handling valvetrain stresses more efficiently. The new ZZ5 heads were dual-drilled with both conventional and Vortec intake manifold bolt patterns, and they were treated to a new, modern, high-rise, Vortec-pattern, dual-plane intake competitive with similar aftermarket offerings.



06

01 On the ZZ5, GM finally went to modern Fast Burn heads. The roofs on the 210cc, Vortec-style intake runners are raised 0.240-inch over standard conventional runners, the heart-shaped 62cc chambers have 2.00/1.55-inch valves in place of the old head's 1.94/1.50 valves, and the exhaust side is also raised by 0.200 inch. (This example has upgraded Comp Cams springs.)

02 Valvespring packages have evolved. As produced, ZZ5 engines have new LS-style "blue" beehive-style springs and retainers for greater high-rpm durability. The "egg-shaped" springs' superior harmonics yield better valvetrain control with reduced pressures than an equivalent conventional spring. All ZZ engines through the ZZ5 use 1.5:1 stamped-steel, self-aligning rocker arms.

03 ZZ engines have always been built using brand-new, late-model blocks machined for factory-style, hydraulic-roller cams. Four-bolt main caps on the center-three journals are standard.

04 The ZZ-series one-piece rear main seal crank has a reduced bolt circle that requires a corresponding, externally balanced flexplate or flywheel. ZZ engines are delivered with an auto trans flexplate, but compatible flywheels are widely available from both GM and aftermarket sources.

05 During 1995, the ZZ3 went to "powdered metal" (PM) rods (right), replacing the previously used forged "pink" rods (left). PM rod-to-rod weight variations are much less—note the absence of the pokey balancing pads—which makes balancing easier while reducing power-wasting rotating mass. PM rods pass the same cycling test as the old "pinks"; they've proven durable up through the latest ZZ6s.

06 Most ZZ engines have used forged, 1053-steel crankshafts. The exception is 1996–1999 ZZ4 assemblies that came with an LT4 Corvette nodular-iron crank. The hardened LT4 crank had rolled journal fillets (arrows), and officially was said to be stronger than a forging. GM switched back to forged cranks in 2000.

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Unfortunately, GM did not see fit to update the ZZ5 short-block, which still retained the ZZ4's LT4-based Mahle pistons. As the new Fast Burn heads have slightly larger combustion chambers than the L98-style heads they replaced, the nominal compression ratio dropped about a quarter-ratio. Despite this reduction and retention of the early 1990s camshaft profile (now considered mild by modern standards), the new heads improved top-end power, with GM's official rating climbing from the ZZ4's 355 hp to 400 hp, a claimed 45hp gain. At 400 lb-ft, officially published torque output remained within five numbers of the most commonly quoted ZZ4 numbers.

For 2016, Chevrolet replaced the ZZ5 with the new ZZ6. The main changes over the ZZ5 include a larger, 770-cfm Holley carb, 1.5:1 roller rocker arms, and a single-plane intake manifold. Officially, the ZZ6 is rated at 405 hp at 5,600 rpm and 405 lb-ft of torque at 4,600. As the ZZ engines have long been a foundation for a good-running street engine, we'd like to see how the ZZ5/ZZ6 Fast Burn heads respond to typical hot rod bolt-ons. We've been throwing cams, intakes, carbs, and other parts at a ZZ5. Stay tuned for a complete dyno-flog early next year. ☐

Contacts

CHEVROLET PERFORMANCE PARTS;
Grand Blanc, MI; 800.577.6888 (nearest dealer);
ChevroletPerformance.com

JOHN ELWAY CHEVROLET ON BROADWAY;
Englewood, CO; 800.345.5744 or 303.761.1286;
JohnElwayChevrolet.com

01] ZZ5 and ZZ6 motors still use the lightweight LT4 Mahle hypereutectic piston introduced on the ZZ4. These pistons have pressed pins and feature a modern, low-drag, metric ring package, yielding a nominal 10:1 static compression ratio on the ZZ4's L98-style 58cc combustion-chamber heads, but just 9.72:1 with the Fast Burn heads' larger 62cc chambers. Perhaps it's time for a new piston.

02] Starting with the ZZ3, ZZ engines have come with a windage tray. All ZZ's have a high-pressure oil pump. All ZZ4-and-later engines have a pickup tube diameter of 0.742 inch, compared to 0.620 inch on some pre-ZZ4 assemblies.

03] Earlier oil pans won't fit the ZZ's late one-piece seal block. All ZZ engines have been delivered with a 5-quart (including filter), ZZ8-style pan that clears the front frame crossmember in Camaros, Chevelles, and similar chassis.

04] Original ZZ3, ZZ1, and ZZ2 engines came with a 6.75-inch-od harmonic damper. On the ZZ3, GM started using a more durable 8-inch damper. The version of the 8-inch damper used on ZZ4-and-later versions has degree marks (shown).

05] For compatibility with then-current production tooling, the ZZ4 replaced the previously used, 10-bolt, stamped-steel timing cover with an 8-bolt composite cover (shown). It's used on all subsequent ZZ motors. It won't clear a double-roller timing chain.

06] ZZ3, ZZ3, ZZ4, ZZ5, and ZZ6 motors all use a Cloyes-manufactured heavy-duty, single-roller timing chain set that's proven extremely durable. Note the upper sprocket is compatible with the different factory roller cam front snout and thrust plate; old-school chains won't bolt up to the late cam snout. ZZ1 and ZZ2 engines had a conventional, butt-link chain.

07] Although specific part numbers have varied through the years, all ZZ engines have used a GM large-cap HEI distributor assembly with centrifugal and vacuum advance provisions. If it's not broken, why mess with it?

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	ZZZ	ZZ1	ZZ2	ZZ3	ZZ4	ZZ5	ZZ6
YEARS MADE	1989–1990	1991	1992	Late 1992–early 1996	Mid 1996–2014	2014–2015	Late 2015–2016
LONG-BLOCK ASSEMBLY PN	10134338	10185025	10185025 (same PN as ZZ1)	10185072	24502609	19301293	19351532
TURNKEY ASSEMBLY PN	–	–	–	–	17499712 (2005–2008) 19201330 (2009–2014)	19301294	19351533
POWER (HP) @ RPM	34.5 @ 5,600	Same as ZZ2	Same as ZZ2	345 @ 5,250 313 @ 4,750 ¹	355 @ 5,250 (1996–2006) 355 @ 5,300 (2007) 355 @ 5,400 (2008–2014)	400 @ 5,600	405 @ 5,600
TORQUE (LB-FT) @ RPM	387 @ 3,600	Same as ZZ2	Same as ZZ2	387 @ 3,250 380 @ 3,500 ¹	405 @ 3,500 (1996–2006) 405 @ 3,600 (2007, 2009–2014) 418 @ 3,600 (2008)	400 @ 3,500 or 4,000 ¹	405 lb-ft @ 4,600
MAX RECOMMENDED RPM	5,800	5,800	5,800	5,800	5,800	5,800	5,800
CYLINDER BLOCK	Gray iron w/ 4-bolt-main intermediate caps, 1-piece rear main seal, mechanical fuel pump provisions	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2
COMPRESSION RATIO	9.8:1	Same as ZZ2	Same as ZZ2	Same as ZZ2	10.0:1	9.72:1	9.72:1
CRANKSHAFT	1053 forged steel	Same as ZZ2	Same as ZZ2	Same as ZZ2	Gen 2LT4, nodular iron w/ undercut and rolled fillets (1996–1999) 1053 forged steel (2000–2014)	1053 forged steel	Same as ZZ5
CONNECTING RODS	1053 forged steel “pink”	Same as ZZ2	Same as ZZ2	Same as ZZ2 (1993–1995) Forged powdered-metal (1995–1996) ²	Forged powdered-metal	Same as ZZ4	Same as ZZ4
PISTONS	Cast hypereutectic	Same as ZZ2	Same as ZZ2	Same as ZZ2	Gen 2LT1 cast hypereutectic	Same as ZZ4	Same as ZZ4
PISTON PINS	Pressed, no offset	Pressed, offset	Pressed, offset	Pressed, offset	Pressed, offset	Pressed, offset	Pressed, offset
CAM TYPE	PN10134334 single-pattern hydraulic roller	Same as ZZ2	Same as ZZ2	PN10185071 dual-pattern hydraulic roller	Same as ZZ3	Same as ZZ3	Same as ZZ3
CAM LIFT (INT./EXH.)	0.480”/0.480”	Same as ZZ2	Same as ZZ2	0.474”/0.510”	Same as ZZ3	Same as ZZ3	Same as ZZ3
CAM DURATION @ 0.050	0.235°/0.235°	Same as ZZ2	Same as ZZ2	208°/220°	Same as ZZ3	Same as ZZ3	Same as ZZ3
ROCKER ARMS	1.501 self-aligning pallet-style	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ3	Same as ZZ3	1.51 self-aligning full-roller
TIMING CHAIN	Single roller, 1/2”-pitch, steel crank sprocket	Butt-link	Butt-link	Single roller, 1/2”-pitch, steel crank sprocket	Same as ZZ3	Same as ZZ3	Same as ZZ3
FRONT COVER	Stamped steel, 10 bolts, bolt-on timing tab	Same as ZZ2	Same as ZZ2	Same as ZZ2, but w/ pointer	Composite, 8 bolts, integral pointer	Same as ZZ4	Same as ZZ4
TORSIONAL DAMPER	6.75”-od	Same as ZZ2	Same as ZZ2	8”-od	8”-od, degreed	Same as ZZ4	Same as ZZ4
CYLINDER HEAD	PN101850871.98 Corvette aluminum, D-shaped exhaust ports	Same as ZZ2	Same as ZZ2	Same as ZZ2, but w/ radius valve seat inserts, exhaust valve-stem seals	PN125564631.98 aluminum, D-shaped exhaust ports	PN19300955 3rd Design Fast Burn aluminum, raised intake/exhaust ports	Same as ZZ5
CHAMBER VOLUME	58 cc	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2	62 cc	Same as ZZ5
VALVES (INT./EXH.)	194”/1.50”	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2	2.000”/1.590”	Same as ZZ5
VALVETRAIN	Chrome-silicon springs w/ damper, 85-lbs seat pressure (“orange” color-code)	Same as ZZ2	Same as ZZ2	Same as ZZ2, but w/ reduced-mass retainers	LT4 lightweight retainers, ovoid springs, 100-lbs seat pressure	LT4 lightweight retainers, LS-style beehive springs, 101-lbs seat pressure	Same as ZZ5
PUSHROD GUIDEPLATES	Yes, nonhardened	Same as ZZ2	Same as ZZ2	Same as ZZ2	No guideplates	Same as ZZ4	Same as ZZ4
ROCKER COVERS	Silver stamped steel	Same as ZZ2	Black stamped steel, revised PCV location	Same as ZZ2	Same as ZZ2	Polished aluminum w/ Bow-Tie & Chevrolet logo	Black w/ Bow-Tie & Chevrolet logo
INTAKE MANIFOLD	High-rise dual-plane, Holley 4150 flange, 4.3” overall height	Same as ZZ2, but w/ oil-filler hole revision	Same as ZZ1, but w/ late-model accessory bracket mounts	Dual-plane, dual-pattern carb flange (4150 Holley & spreadbore Q-jet), EGR provisions, 4.0” overall height	Same as ZZ3	High-rise dual-plane, Holley 4150 flange, Vortec-style bolt-pattern	High-rise single-plane, Holley 4150 flange, Vortec-style bolt-pattern
DISTRIBUTOR	GM large-cap HEI w/ centrifugal and vacuum advance, PN 11034336	Same as ZZ2	Same as ZZ2	Same as ZZ2	GM large-cap HEI w/ centrifugal and vacuum advance, PN 1104067	Same as ZZ4	GM large-cap HEI w/ centrifugal and vacuum advance, PN 93440806
WINDAGE TRAY	No	No	No	Yes	Yes	Yes	Yes
OIL PUMP PICKUP TUBE	0.620” or 0.742” ¹	0.620” or 0.742” ¹	0.620” or 0.742” ¹	0.620” or 0.742” ¹	0.742”	0.742”	0.742”
OIL PAN	5qt Z28 w/ internal baffle	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2
IGNITION TIMING	10° BTDC @ 800 rpm	Same as ZZ2	Same as ZZ2	Same as ZZ2	10° BTDC @ 800 rpm, 32° total @ 4,000 rpm w/ vacuum advance disconnected	Same as ZZ4	36° total @ 4,000 rpm
OCTANE REQUIREMENT	97 (R+M/2)	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2	Same as ZZ2	93 (R+M/2)

NOTES: ¹Emissions-legal retrofit package PN 10185077. ²Late-production ZZ3 transitioned from forged-steel “pink” rods to forged powdered-metal rods. It is uncertain exactly when this running changeover occurred. This is the main difference between early and late ZZ3 assemblies. No engine assembly PN change apparently occurred. Official sources differ. ³Check engine. Components may vary due to running changes.



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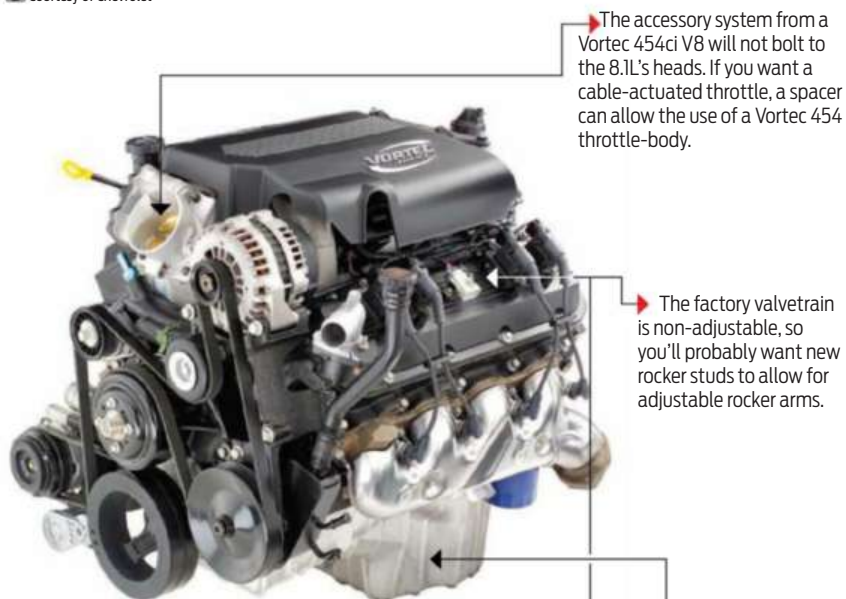
So you've decided you want an 8.1L engine in your muscle car or your tow rig, and who can blame you? They make more torque at 800 rpm than a factory LS1 produced at any point in its rpm range. Because they were also intended for marine and medium-duty truck use, they were subjected to grueling development tests, including the "Marine Dock" test that involves running the engine at full throttle for 55 minutes and then idling if for five minutes, 300 times. In other words, they're incredibly durable.

With both Ford and Dodge dropping big-blocks in favor of V10 gas engines for their heavy-duty trucks, GM was the last OEM to produce big-block passenger vehicles into the 21st century, and the 8.1L had

many of the advancements that make GM's Gen III LS small-blocks so successful. The factory fuel-injection system and engine diagnostics are more advanced, their cylinder-head ports are similar to the cathedral ports you'd find on an LS1—only larger—flowing around 285 cfm on the intake. They also use coil-on-plug ignition with a crank trigger for accurate spark timing. With those improvements, they still use the same engine mounts, bellhousing bolt pattern, exhaust bolt pattern, and starter that are found on a traditional big-block, making bolting one into your car or truck relatively straightforward. But where to find one?

►HOTROD.COM/Brandon-Gilgoly

📷 Courtesy of Chevrolet



► The accessory system from a Vortec 454ci V8 will not bolt to the 8.1L's heads. If you want a cable-actuated throttle, a spacer can allow the use of a Vortec 454 throttle-body.

► The factory valvetrain is non-adjustable, so you'll probably want new rocker studs to allow for adjustable rocker arms.

Pickup Version



► Later production Marine, industrial, and medium-duty trucks use massive oil pans. The rear-sump, light-duty truck pans are much more swap-friendly.

TopKick and Kodiak Version

■ Light-truck and SUV applications will be the easiest to find, and they're the best bet for a complete engine but the A/C compressor low on the passenger side is likely to interfere with the frame. Medium-duty truck engines with option code LRW mount the A/C compressor high on the driver side, making swapping easier. The air-brake-equipped trucks with option code KDZ will mount it high on the passenger side. You can eliminate the brake air compressor and its related idler and reroute with a shorter serpentine belt.

■ 2004 engines eliminated the EGR system with tuning changes that made it obsolete. 2004 also included more durable crank and cam timing sensors that are the same as those used on the Gen III small-block, making them more likely to be stocked in your local parts store.

■ Industrial 8.1Ls use different valvesprings meant for low-speed operation. The 2004-and-later industrial 8.1Ls use the same valves as the truck applications, so only the springs need to be updated.

■ The light-truck and SUV applications moved to a returnless-style fuel system in 2004, marine applications followed in 2005, and the medium-duty trucks in 2006. Returnless systems don't heat up the fuel as much and there's less plumbing, but the earlier systems allow for easily adjustable fuel pressure. If you want more power with the stock injectors, the return style is the way to go.

VEHICLES EQUIPPED WITH 8.1L V8S

2001–2002 GM 3500HD trucks. There were carryover chassis cabs that used the 1988–1998 body style.

2001–2002 Chevrolet Express/GMC Savanna vans.

2001–2006 Chevy and GMC 2500/3500 trucks and Suburbans.

2001–2009 Chevy Kodiak and GMC TopKick medium-duty truck.

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Like all really good ideas, this one started while we were drinking beer on a summer day. My friend, Laura, was complaining that she wanted to learn more about auto mechanics, but didn't know where to start. "If you really want to learn how cars work," my boyfriend, Tom, said, "you should build a minibike. It's

only got one cylinder, so you have to get it running right."

He was pretty surprised when I came home with a 4.5hp, Clinton-powered 1968 Torpedo and Laura asked him, "When do we start?"

Do you remember your first introduction to mechanical activity? Probably not—most gearheads start young—but as Laura showed us during the course of our Saturday, it's never too late to learn "righty tighty, lefty loosey."

We laid out the basic handtools—combo wrenches, screwdrivers, ratchet, and sockets—and then sat back and watched Laura discover the satisfaction of breaking free a stuck bolt, and the pain of a slipped wrench. Yeah, she bloodied a knuckle, but it didn't stop her and we had the bike stripped to a frame by the end of the afternoon.

During the engine teardown, we were able to showcase the four-stroke cycle, and even the idea of proper cam timing. "All of this was just vocabulary words to me before," Laura said later. "You don't understand it until you do it."

Next on her to-do list? Source replacement Clinton engine gaskets and put it all back together. Then we're headed to El Mirage to see how we did. Feel free to teach someone you know how to build a minibike and come join us!

►HOTROD.COM/Elana-Scherr

[That's the look of a gal who just pulled her first engine.



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Thom On Design Building Bodies For Fun and Profit



HOT ROD Archives

Creating a car body is difficult, time-consuming, and requires a lot of skill and craftsmanship. It's also a cornerstone of hot rodding. The process for creating a body in Detroit for a production car and the same process used by hot rodders and racers are as disparate as you can imagine.

Detroit goes through many phases of creating a body, from reams of sketches to clay or foam scale models, computer-aided design development, and then fullsize mock-ups and clay models before the design is finalized for tooling. Things can be tweaked a millimeter or a mile, and the process devel-

ops each and every surface, transition, and detail to the nth-degree. There's no room for a mistake as you're looking at possibly hundreds of thousands of like examples that will ply the highways almost forever. Thousands of engineers, designers, and management scrutinize every possible portion of the body.

Hot rodders and racers don't have the luxury of an evolved design process and sweetening each and every inch of a body. They usually start with a few crude sketches, build a wooden buck that fairly accurately captures the body they have in their minds, and then start beating aluminum over the buck,

stretching and shrinking the metal until a section of the body fits the buck. These multiple sections are then welded together, and the welds are filed and metal finished by hand. In the end, what they get is a testament to the eyes and hands of the panel-beater. There are no second chances, and if a surface isn't how it was envisioned, it is either cut out of the body and a new one attached, with all of the filing and bodywork necessary for such a drastic correction, or more likely it's left for the entire world to gaze at. Either way, it's an unforgiving process.

But it's what makes a hand-formed track nose or Bonneville Streamliner body a sight to behold, a one-off rolling sculpture that makes everyone connected with the project and all of us proud to be hot rodders. We're proud to be part of such an imaginative, craft-intensive pursuit that is created by just a handful of smart and gifted individuals, even if we're only on the periphery of hot rodding or racing. We know what we want, and have our own means for getting there, and it's the complete opposite of how a body is designed and manufactured for production. It exemplifies the essence of hot rodding to those who don't or can't understand its attraction. We are part of that, even when we're not.

►HOTROD.COM/Thom-Taylor

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What Are Some Ways to Lighten a Car, and is it Really Worth the Effort?

TEN Archives

For typical street/strip cars, every 20 pounds of weight reduction is like adding 10 hp, so on bone-stockers, lightening the car (at least initially) is a cheap way to make it quicker. Here's a baker's dozen of weight-saving tips, from relatively simple and cheap to more complex and costly:

1. Remove the spare tire and jack.
2. Remove the rear seat.
3. Remove the entire air-conditioning system (not just the compressor).
4. Remove the radio and speakers.
5. Remove the windshield wipers and wiper motor.
6. Relocate the battery to the trunk just above the right rear tire. This doesn't actually cut total weight, but will improve e.t.'s by aiding weight distribution and traction. (The right rear tire tends to unload before the left tire.)
7. Gut the interior: Remove the

interior trim, carpeting, and upholstery. Consider lighter seats.

8. Run the lightest wheels and tires you can.
9. Lightweight performance engine parts add power and cut weight. Install aluminum engine parts, including the intake manifold, water pump, cylinder heads, and pulleys.
10. Install an aluminum radiator.
11. Change from power brakes to manual brakes.
12. Change from power steering to manual steering.
13. Install as many lightweight body panels as you can afford. Traditionally, that means fiberglass, but carbon-fiber is increasingly available and the price is coming down. Mid-1970s-and-newer 5-mph bumpers and their supporting structure are heavy!

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[Getting the hood to close with a nonrestrictive air cleaner was challenging. Cobra owner Tom Wong ended up with a pile of surplus units.



[Tom Wong has owned his Art Butler–built 1965 AC Cobra replica for 10 years. The car had slowly deteriorated into a garage “hanger queen.”



[The 289 motor barely ran. It was being held back by a poor tune-up, erratic timing, carbon fouling, and an undersize air cleaner.

The Ford 289 in Tom Wong's Cobra Stalls, Diesels, Backfires, and Runs out of Breath Upstairs. We're Gonna Fix It.

✉ Marlan Davis 📷 Justin Fivella

THE COMBO

Tom Wong's 1965 AC Cobra replica should really have some get up and go. The old-school build packs a 0.030-over Ford 289, a Top Loader four-speed, a Jag independent rear suspension with inboard brakes out back, and an MG front end. A 600-cfm Holley double-pumper carb atop a Weiand dual-plane intake meters the fuel, a Mallory distributor with a Pertronix breakerless conversion and coil lights the spark, and headers and duals exhaust the spent mixture. Wong doesn't know much about the short-block, other than the cam is “some type of hydraulic flat-tappet” and “the motor seems to run fine on 91 octane [gas].”

THE PROBLEM

“Three years ago,” Wong says, “it just started to deteriorate in general. It's gotten worse over time. The car runs rough and backfires on acceleration at full throttle or sometimes when I step into it. It occasionally flat-taps in high gear. Sometimes when I shut it off, it diesels or runs on (I don't have A/C). Starting up, it won't hold an idle. It runs rich

on start-up, in the morning or when it sits for a while. It will sort of settle down after it warms up.” Other than cold-start, Wong says, “The problems don't appear to be temperature-sensitive. The engine does not smoke, it does not overheat, and it does not use oil. Oil pressure is at least 40 psi.” Two years ago, the spark plugs were changed out. “They were not ash white, not gray, not brown.” To Wong's knowledge, the engine has never had a vacuum or compression check.

Several shops worked on the car, but it continued to deteriorate. As the problems got worse, Wong drove the car less and less frequently. Eventually, Wong says he just “changed the oil and started it up for a yearly ‘circulation.’” The Cobra basically went into hibernation.

THE REPAIR SHOP

Wong's home base is Fremont, California. For you non-left-coasters, that's on the southeast side of San Francisco Bay, about 1½ hours away from BRG Racing in Pacheco, a well-known local tuner shop for cars and motorcycles. Locals refer to

owner K.C. Gager as “The Carb Doctor.” K.C. says, “We do a lot of antiques and old carbureted hot rods. We have someone old enough to know what a carburetor is, but we do EFI as well. We have a Mustang chassis dyno, a CNC mill, a regular mill, and a lathe. There's not much we can't fabricate. We also do custom engines and brake systems.”

THE DIAGNOSIS

Wong trailered the ailing Cobra 75 miles to BRG. On arrival, it idled high at 1,200 rpm, backfired, and dieseled on shut-off. K.C. found the idle-speed screw backed all the way out; far from being rich as Wong supposed, the mixture was way too lean. K.C. backed the idle speed down to 900 rpm and turned the mixture screws 2½ full turns clockwise (richer). This stabilized the idle and stopped the dieseling. “Assuming a mild 9.5:1 compression ratio, 900 rpm is a good middle ground,” K.C. explained. “The hood started shaking less,” but overall the car remained sluggish and nonresponsive. Additional troubleshooting indicated a severely mistuned engine with:

- **Carbon-fouled spark plugs:** This usually indicates an over-rich mixture or an ignition problem, but K.C. already knew that at least at idle the car was running way lean.
- **Low cranking compression:** Seven cylinders were in the 140-psi range, with only one hitting 150. That's weak for a hot rod and may indicate an internal sealing issue.
- **Internal carbon deposits:** A bore-scope inserted through the spark-plug holes revealed soft, fluffy carbon deposits in the combustion chamber and on the piston tops. “Unburnt carbon was ruining the seal, preventing the valves from seating, and stealing the spark,” K.C. says. Wong had never floored or driven the car hard because it ran so poorly; yet not driving the car had only compounded the problem, resulting in a vicious downward spiral. BRG cleaned and reinstalled the plugs, checked all the fluids, and put the car on the dyno. Three preliminary dyno runs blew the carbon out of the motor. The valves started sealing and cranking compression rose into the 150s, decent for a

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BRG Racing's K.C. Gager (center) and his staff have decades of experience tuning and building high-perf motors for cars and motorcycles.



BRG installed a new damper, rebuilt the distributor and the carb, added a carb spacer, and tuned the combo to within a "gnat's ass."



More venom for the Snake: BRG's tune and a few basic parts proved to be worth 54 lb-ft and 66 hp at the rear wheels.



A



B



C



D

BRG's initial inspection revealed carbon-fouled spark plugs (A), seemingly indicating a rich mixture. Cranking compression was low. It turns out soft, fluffy carbon (B) was clogging the combustion chamber, preventing the valves from seating. As a crutch, some previous tuner had actually adjusted the fuel mixture way too lean. Misaligned pulleys (C) caused a thrown drivebelt during initial dyno runs. Ignition timing (D) was both retarded and kept moving around.

low-compression engine. In its poorly running baseline condition, the engine wheezed to 199 lb-ft of torque and 151 hp at the rear wheels. Additional problems reared up during these initial runs, including:

- **Misaligned pulleys and drivebelt:** The car kept throwing the alternator belt at high

rpm. BRG fabricated a longer alternator spacer to properly align the drive pulleys.

- **Throttle stuck wide open on the dyno:** BRG slightly bent the throttle linkage and replaced a missing nut.
- **Retarded, inconsistent timing:** Base timing was just 2 degrees BTDC, with only 22

degrees total advance. Worse, it was moving around. This could indicate a loose distributor clamp, a worn distributor, a failing harmonic balancer, and/or a bad timing chain.

- **Weak spark:** BRG found rotted spark-plug wires, and a worn distributor cap and rotor.

- **Carburetor lean overall:** "The spark plugs looked rich as hell before the tune," K.C. said. "I was surprised during the first run that it was so lean."
- **Restrictive air cleaner; hot air/fuel mixture:** The closely cowled Cobra had too-small an air cleaner, and the fuel was also too hot on the low-rise Weiand dual-plane.

THE FIX: ERRATIC TIMING

Starting with the basics, K.C. first tightened the distributor hold-down clamp. No joy. Next, he pulled the distributor and found the shaft had excessive endplay. BRG rebuilt the distributor and shimmed the shaft to reduce endplay. A new MSD cap, rotor, and spark-plug wires were installed. But the timing was still erratic.

Time for a close look at the harmonic damper. Yup, the outer ring was separating from the inner hub. Getting the right



In many cases, you don't need to throw a ton of parts on a car—just know how to tune."

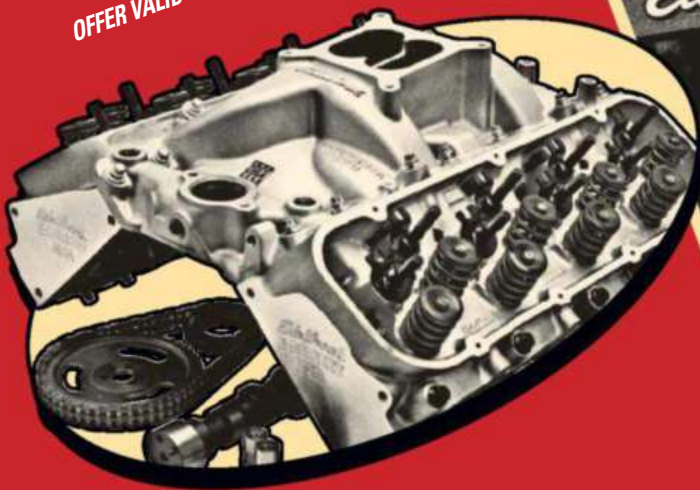
—K.C. Gager, BRG Racing

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Ford replacement balancer can be tricky because over the years there have been many variations. Once BRG identified what unit was on the car the good folks at Summit Racing—who supplied nearly all the repair parts for this Rescue—sent the right three-bolt-pulley 289 PowerBond By Dayco balancer.

THE FIX: CARB, AIR CLEANER, TUNE-UP

BRG pulled the old and worn 600-cfm double-pumper carburetor for complete disassembly. After sonic-cleaning, it was rebuilt using a Holley Trick Kit. Besides containing premium rebuilding parts and gaskets, the package also includes an assortment of performance tuning parts. After much fine-tuning, BRG went two jet sizes richer on all four corners and increased shooter sizes by 0.003 inch. The carb's as-received 6.5-in-Hg power valve proved right on the money, although BRG did replace it with the kit's equivalent brand-new valve (see "Carburetor Calibration" table, page 122).

With decades of experience, BRG has developed some unique carb fine-tuning tricks. K.C. believes old Holley booster venturis are "quite crude" compared to some modern Holleys that have more sophisticated annular-discharge boosters. To crutch the early design, K.C. drilled two 1/16-inch holes in each booster "leg." The mod adds 5 to 10 more inches of vacuum, increasing suction to better emulsify the fuel for smaller, more evenly dispersed fuel droplets. Proper air/fuel ratios can be achieved without going too big on the jets, potentially enhancing both power and fuel economy.

Using a four-gas exhaust-analyzer that looks at carbon monoxide, carbon dioxide, and hydrocarbons in addition to oxygen, BRG achieved stable 13.2–13.3:1 WOT air/fuel ratios, 13.5–13.8 at cruise, and 13.8–14.0 at idle with just 3 to 5 percent carbon monoxide—pretty good for an old-school carbureted car. K.C. explains, "When



01



02



03

01] BRG cleaned the carbon deposits off the plugs using a stiff wire brush, then reinstalled them. Several preliminary dyno runs blew the soft carbon deposits out of the combustion chambers. Cranking compression returned to normal.

02] The pulley on Wong's GM 10-SI alternator didn't line up with the water pump pulley. The simple fix: Fab a 1/4-inch longer alternator pivot-bolt spacer (arrow), then replace the shredded drivebelt with a new Gates belt.

03] The throttle-linkage rod wedged underneath the air cleaner at full-throttle. BRG vise-bent the rod so it wouldn't hit the baseplate, then replaced a missing nut where the throttle-linkage-rod attached to the throttle lever.



04

05



04] At 0.060 inch, distributor-shaft endplay was terrible. As rpm rises, this causes spark scatter, poor rotor phasing, and erratic timing. It can even wear out the cam gear due to poor gear-tooth contact. BRG disassembled, cleaned, and lubricated the distributor, then shimmed the shaft to reduce endplay to under 0.005 inch. The "shims" were expedient washers from BRG's private stash.

05] Wong's old Mallory distributor received a new MSD cap and rotor.

06] The spark-plug wires were rotted out and several poorly routed wires were burned from contacting the header tubes. To ensure proper clearance, BRG custom-tailored a new set of wires using a universal MSD 8.5mm Super Conductor wire kit. These wires have extremely low resistance, yet are still able to suppress electromagnetic interference.



06

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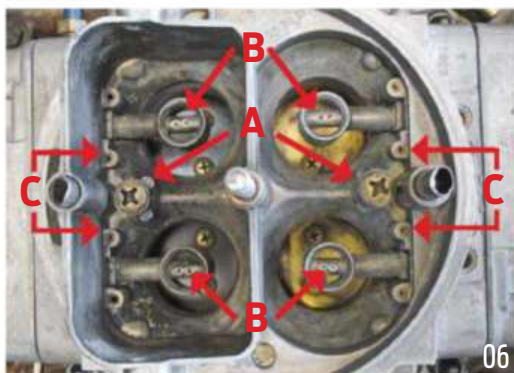
you get close, the car really wakes up and even one jet number can make a difference. If the ignition is set correct, and the spark plug comes out slightly whitish, I don't have a problem. It's only dangerous if the electrode is speckling, then I go up one jet. 'Light tan?' I stopped doing that 12 to 13 years ago; it leaves too much on the table. When I'm done I've got a super-running motor that runs efficiently and gets good fuel mileage. It flies in the face of what other tuners think is right, but that's what makes a horse race!"

Wong's small, 10-inch-od, 1½-inch-tall air cleaner was replaced by a 14-inch K&N XStream assembly on a 1¼-inch dropped base. With the timing now consistent, K.C. slowly dialed in more advance, finally ending with 18 degrees initial and 38 degrees total. Gains from just the carb calibration, larger air filter, and more timing were worth about 46 hp and 34 lb-ft at the wheels, bringing peak totals to 197 hp and 233 lb-ft. But BRG wasn't finished yet.

THE FIX: CARB SPACER

A carb spacer can boost power and torque, and (depending on material) also insulate the carb from the hot intake and engine. BRG's carb tuning ace Chad Hammer likes Jomar spacers. He says they seem to make the most power and because they're made from phenolic material, provide a more effective heat barrier than aluminum or plastic spacers. "By increasing the distance to the bottom of the intake manifold's plenum floor, a spacer helps fight fuel puddling and prevent reversion," Hammer explained. "The fuel can enter the intake smoother for more power." K.C. adds, "Heat isolation from the carb is huge. I can't stress how important it is to have cool ambient temperature going in. There's a lot of heat from the radiator on this closely cowed car."

BRG tried a Jomar 1-inch open as well as a 1-inch four-hole tapered "Power Cone" Jomar spacer. The four-holer



01] DEI Heat Shroud (arrows) protects the distributor primary wiring. Resistant to 500 degrees F, Heat Shroud's hook-and-loop fastening (aka Velcro) closure allows its split-seam configuration to easily fit over existing, already-connected, wire bundles.

02] The 289's OE harmonic damper was delaminating—the rubber ring between the outer and inner halves was rotted, causing the outer section to move around and alter the timing. Note the "C5AE" ID number cast into the balancer, indicating it fits a 1965-1966 289 (except High Performance) with a 28.2-oz-in unbalance factor and early three-bolt pulley bolt pattern.

03] With balancer correctly identified, Summit Racing sent an upgraded (but functionally equivalent) PowerBond by Dayco unit that is even fully degreed. Ford small-block balancer applications vary by application. If unsure what your motor needs, check casting numbers against the list of balancer and crank pulleys on MustangTek.com.

04] Holley's Trick Kit has all parts needed for rebuilding most of its vacuum-secondary or double-pumper carbs, plus assorted calibration parts including pump discharge nozzles and cams, vacuum-secondary springs, extra gaskets, and a tuning guide. Main jets aren't included.

05] BRG sonic-cleaned the carb before rebuilding it using the Trick Kit. Here, BRG checks the secondaries to see if they're fully opening. Sometimes the double-pumper's mechanical linkage must be tweaked slightly to achieve full 90-degree (vertical) secondary throttle-blade opening.

06] Accelerator pump nozzle size was increased to 0.035 inch (A). To improve signal and response BRG drilled two small holes in each booster feed-tube (B). BRG often drills the high-speed air-bleeds (C) oversize to fine-tune performance over 3,500 rpm; a 1/16-inch-id increase is like going ½ jet-size leaner, but on this carb they were already at 0.080, the largest you can safely go.

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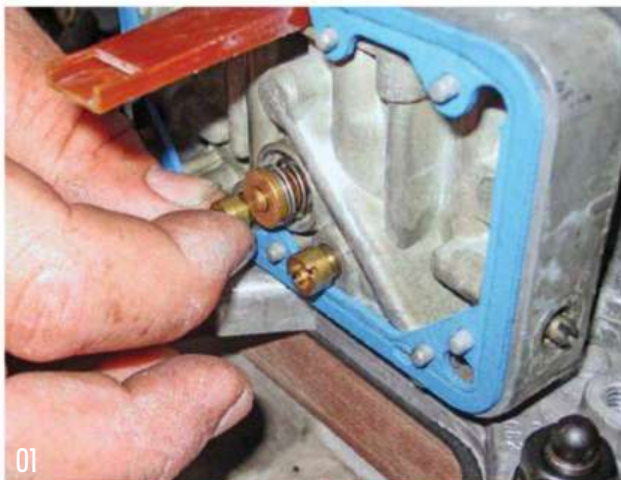
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01] BRG ended up going two jet numbers richer—from No. 60 to 62 on the primary side, and from No. 76 to 78 on the secondaries.

02] Spacers can boost power and torque by improving fuel distribution and heat isolation—especially in a tight, restrictive engine compartment like the Cobra's. This Jomar 1-inch open spacer was worth 7 lb-ft and 11 hp. Tribal knowledge says open spacers usually work best on a dual-plane intake...

03] ...but Wong's combo proved the exception. Jomar's four-hole, Power Cone, 10-degree taper, 1-inch spacer gained another 6 hp and 3 lb-ft over the open spacer, and was up 17 lb-ft and 20 hp over the no-spacer test. BRG's Chad Hammer says, "We thought, 'No way!' We're used to seeing 4–5 numbers at best. We even recalibrated the dyno to make sure, but it was the real deal."

04] Wong's small 10-inch air filter was axed for a big K&N unit with a 14-inch-od x 3-inch-tall element and an add-on XStream air-cleaner lid that offers even more filter area. However, the top is also 1-inch taller than a standard metal lid. BRG knew going in that hood clearance would be tight on the Cobra, so it ordered the K&N unit with a 1¼-inch dropped base, the largest drop offered.

CARBURETOR CALIBRATION

All dimensions in linear inches or fractions thereof.

	PRIMARY-SIDE				SECONDARY-SIDE			ADDITIONAL CUSTOM MODIFICATIONS ³
	MAIN JETS ¹		PUMP NOZZLE	POWER VALVE	MAIN JETS ¹		PUMP NOZZLE	
	NO.	HOLE SIZE ²			NO.	HOLE SIZE ²		
BEFORE	60	0.060	0.031	6.5 in Hg	76	0.0840	0.031	High-speed bleeds enlarged to 0.080
AFTER	62	0.061	0.035	6.5 in Hg	78	0.0870	0.035	Drill (2) 1/16 holes in all booster feeds

NOTES: ¹Not included in Trick Kit PN 37-933. ²For reference only; Holley jets are sized by actual flow and may vary dimensionally from size listed. ³See text for details.

CHASSIS-DYNO RESULTS

Data corrected to SAE J607, as measured at the rear wheels on BRG's Mustang chassis-dyno.

TEST DESCRIPTION & COMMENTS	UNIT OF MEASURE	MAX OUTPUT @ RPM	NET CHANGE FROM...	
			PREVIOUS	BASELINE
Baseline: Adjust idle speed, clean plugs. Timing was erratic, threw fan belt, carbon in chamber.	Torque (Lb-Ft)	199.1 @ 3,250	—	—
	Power (HP)	151.3 @ 4,500	—	—
Basic tune-up: Rebuild distributor; install new harmonic damper, new spark-plug wires and larger K&N air filter; rebuild & modify carb; correct drivebelt misalignment	Torque (Lb-Ft)	232.9 @ 3,500	+33.8	+33.8
	Power (HP)	197.3 @ 5,000	+46.0	+46.0
As previous plus Jomar 1in open spacer	Torque (Lb-Ft)	239.9 @ 3,500	+7.0	+40.8
	Power (HP)	208.5 @ 5,250	+11.2	+57.2
Replace Jomar 1in open spacer with Jomar 1in 4-hole Power Cone tapered spacer	Torque (Lb-Ft)	252.6 @ 3,500	+12.7	+53.5
	Power (HP)	214.4 @ 5,500	+5.9	+63.1
Replace Jomar 1in 4-hole Power Cone tapered spacer with 1/2-inch Jomar 4-hole straight spacer, modify air cleaner baseplate for more drop (both needed for hood clearance)	Torque (Lb-Ft)	256.4 @ 3,500	+3.8	+57.3
	Power (HP)	213.8 @ 5,000	-0.6	+62.5
Final: As previous plus additional final tweaks and fine-tuning	Torque (Lb-Ft)	253.2 @ 3,500	-3.2	+54.1
	Power (HP)	217.5 @ 5,250	+3.7	+66.2

worked best on Wong's 289, upping power to 214 hp and 253 lb-ft. But the truth is you never really know what spacer (or even no spacer at all) a given engine might "like." Try 'em all and let the dyno sort them out.

It turned out the engine setback in Wong's Cobra was greater than standard for this chassis, preventing the hood from fully closing with the 1-inch spacer. BRG had to step down to a 1/2-inch nontapered Jomar spacer, then mod the existing K&N dropped base for a little more drop. This finally got the hood to close, and to everyone's surprise, at the peaks initially cost less than 1 hp while gaining nearly 4 lb-ft. However, Hammer says midrange numbers—the "total area under the curve"—were down on average, so we say run the big spacer if there's room for it.

THE RESULTS

Prior to finally releasing the car, BRG did a few final tweaks that brought the numbers back up again, with final output ending

up at 253 lb-ft and 217.5 hp, a gain of around 54 lb-ft and 66 hp over the anemic baseline run. Hammer also drove the car around on the street, checking its real-world driveability versus the trans and gear ratio. It's what K.C. calls "our calibrated-butt dyno; everyone's got one. How does it feel in the seat of your pants?" Turns out, the Cobra now kicks some butt. As Wong puts it, "I'm back in love with my car again!"

LESSONS LEARNED

Choose a shop wisely if you don't do your own work. The only real deal-breaker here was the bad harmonic damper. Previous shops failed to detect it, instead Band-Aiding the problem by retarding the timing. Wong gave up regularly driving the car, leading to even more deterioration. Replace the balancer, rebuild the distributor and carb, fine-tune the fuel and spark curves, throw on a spacer and bigger air cleaner—that's all that was needed to wake this Cobra up.

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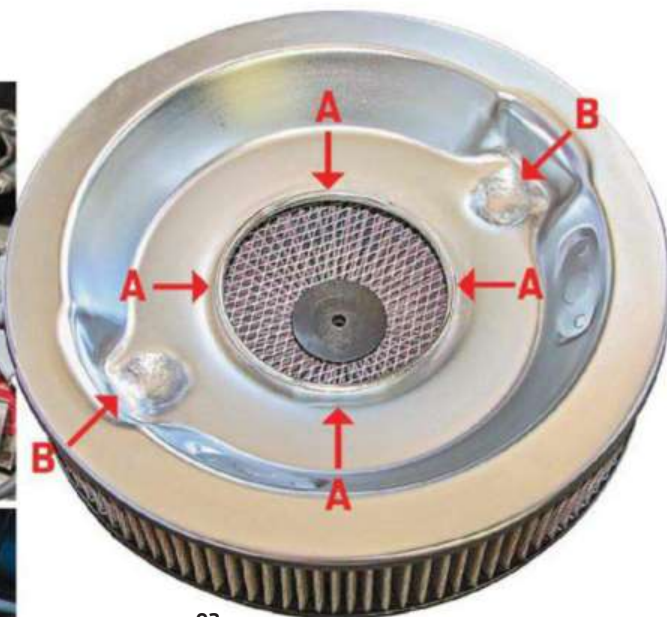
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01 Despite the dropped air cleaner base, the 1-inch spacer kept the hood from closing. Jomar custom-made a special 1/2-inch tall four-hole spacer, its first ever for a 600-cfm-sized carb. It's since been added to Jomar's standard product line. The carb and spacer are retained by an ARP carb stud kit.

02 The shorter spacer *still* wasn't enough—yet BRG didn't want to compromise the tall K&N filter's added performance. It modified the already dropped K&N base by rolling-down the base's carb air-horn mounting lip (A) in a press. At that point, the base contacted the float-level adjusting screws, so an anvil was used to dimple the areas near the screws (B), allowing the base to finally seat flush and the hood to close.

03 Rescue complete and lookin' good! Would you believe 253 hp and 217.5 lb-ft at the rear wheels? That's translates to a 44 percent horsepower gain and a 27 percent torque increase over the Cobra's as-received condition.

Contacts

AUTOMOTIVE RACING PRODUCTS (ARP); Ventura, CA; 800.826.3045 or 805.339.2200; ARP-Bolts.com

BRG RACING; Pacheco, CA; 925.680.2560; BRGracing.com

DESIGN ENGINEERING INC. (DEI); Avon Lake, OH; 800.264.9472 or 440.930.7940; DesignEngineering.com

FEL-PRO (FEDERAL-MOGUL CORP.); Southfield, MI; 800.325.8886; FMe-cat.com

GATES CORP.; Denver, CO; 303.744.5651; Gates.com

HOLLEY PERFORMANCE PRODUCTS; Bowling Green, KY; 800.HOLLEY1 (nearest dealer), 270.781.9741 (tech), or 270.782.2900 (general); Holley.com

JOMAR PERFORMANCE PRODUCTS; Pontiac, MI; 248.322.3080; JomarPerformance.com

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Includes the major parts required to fix the problem. Labor is listed only for machining operations the average home mechanic cannot generally perform in his garage. Does not include shipping charges, sales taxes, or miscellaneous small bolts, hardware, and plumbing. All dimensions are in linear inches, except as noted. Priced 08/12/2015 and subject to change.

BRAND	PART DESCRIPTION	PART NO.	PRICE	
			SOURCE	COST
A. INITIAL COMBO (better, hood-clearance permitting)				
ARP	STUD KIT, carburetor mounting, 3/8" stud od x 2.700" OL, black oxide, for use w/ 1" spacer	200-2402	Summit	\$17.26
DAYCO	DAMPER, crankshaft torsional, PowerBond Street Performance, degreed, 3-bolt pulley, 1966 Ford 289 (exc. 289-HiPerf)	PB1008ST	Summit	\$149.97
DEI	HEAT SHROUD, wire or hose, 1" od x 36" OL, hook-and-loop fastening, 500° F	10405	Summit	\$35.97
FEL-PRO	GASKET, carburetor spacer-to-intake manifold, Holley 4150 and Carter AFB (square-bore), open center	1900	Summit	\$3.97
	GASKET, carburetor-to-carburetor spacer, Holley 4150 and Carter AFB (square-bore), 4 x 1 1/8" od holes	1911	Summit	\$4.97
GATES	DRIVEBELT, XL-series 36° angle notched-V, 3/8" od x 46 1/8", crank-water pump-alternator (OE #11A1170)	7460	O'Reilly	\$21.99
HOLLEY	JET, carburetor main metering, No. 62, 1 pair (used on primary side; not included in kit 37-933)	122-62	Summit	\$7.36
	JET, carburetor main metering, No. 78, 1 pair (used on secondary side; not included in kit 37-933)	122-78	Summit	\$7.36
	TRICK KIT, carburetor repair and performance tuning, fits most Holley performance carbs	37-933	Summit	\$113.95
JOMAR	SPACER, carburetor, phenolic material, 4-hole, 1" height, Power Cone tapered, designed for 600-cfm Holley	5014-X	Jomar	\$92.40
K&N	AIR CLEANER ASSY., carburetor, XStream lid, 14" od, 2 3/4" height above air horn ring, 1 3/4" drop base, 3" filter height	66-3040	Summit	\$121.99
MSD	CAP, distributor, Mallory, V8, red (MSD has purchased Mallory)	209M	Summit	\$22.97
	ROTOR, distributor, Mallory, V8, red (MSD has purchased Mallory)	309	Summit	\$7.97
	WIRE SET, spark plug, 8.5mm Super Conductor, spiral-core, universal, 8-cylinder, black wires, gray 90-degree spark-plug boots, contains both gray male/HEI and female/socket distributor boots	31233	Summit	\$97.95
			INITIAL TOTAL (A)	\$706.08

B. FINAL COMBO (required for hood-clearance on Wong's Cobra)				
ARP	STUD KIT, carburetor mounting, 3/8" stud od x 1.700" OL, black oxide, for use w/ 1/2" spacer	200-2403	Summit	\$16.86
BRG	LABOR & MACHINING OPERATION, modify air cleaner base for additional hood clearance	Custom	BRG	\$75.00
JOMAR	SPACER, carburetor, phenolic material, 4-hole, 1/2" height, straight, designed for 600-cfm Holley	5023	Jomar	\$30.63
			SUBTRACT, Jomar 2" spacer & ARP 2.7" OL carb mounting stud kit	
			- \$109.66	
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What Was the First Car You Drove?



I was recently asked to name the first car I drove. Freaky, but I can't remember. I suspect that's pretty odd for a car guy, especially one who waited by the minute to get his driver's license at 16.

I don't recall my dad ever putting me on his lap and letting me steer, as I've done with my son since he was four. When I was 13 or 14, I had a few friends of driving age and, of course, mooched them for turns at the wheel. We drove around the dirt roads and empty lots in Los Angeles' Griffith Park—ones that are now either gated or occupied with buildings. I think my first chance was in a 1979 Mustang coupe, one of comparatively few powered by an inline-six (which was used only through 1982). Somewhat embarrassingly, I recall an early experience in a Renault Le Car. I do precisely recall my first time with a stick. I was working a summer job at the theater program at Occidental College, either concurrently with Barack Obama's time there or immediately thereafter. There was a huge dump truck used to move sets around, and the college kids were afraid of it. I volunteered, and figured out on my own how to use both the granny-low trans and the

two-speed rearend. My first manual-trans experience in a car was with a friend's 1971 Duster Twister with a 318 and a three-speed. That car inspired my later ownership of at least five Dusters.

I got my 1970 Super Bee on tax day in 1983, five months before I could legally drive. My high school auto-shop teacher was a reserve cop and once spotted me in the Bee when he was patrolling. I only learned that the next Monday morning when he called me to the front of the class and asked me to show him my license—which he knew I didn't have.

High school driver's ed. Wow. I was in the massively overcrowded Los Angeles public school district, and on the first day of the class, the teacher asked for a show of hands from the kids who thought they already knew how to drive. I was in that group. They walked us out to the small fleet of Volares with two steering wheels and two brake pedals and put us on the streets. The next day was a written exam, and bam, I was license-ready. I took my driver test at the DMV in my dad's 1979 Pontiac wagon and passed the first time.

And the rest is history.

►HOTROD.COM/David-Freiburger



[This press photo shows a 1979 Mustang just like the one that was my first ride, right down to the tan interior and goofy wheels. Who could have guessed these cars would create an entire marketplace?

BEHIND THE SCENES

In August 2015, 10,000-plus people showed up at our Roadkill Nights flashlight drags event at the Silverdome in Pontiac, Michigan. We're already planning to do it again next year.

Roadkill Nights is during the Woodward Dream Cruise, which always overlaps the Bonneville Speed Week race, which is a huge bummer for me. Crossing our fingers that the salt recoverers enough for 2016. Both Speed Week and the World Finals were canceled this year due to bad surface conditions.

As I write this, the registration for the first HOT ROD Drag Weekend event is going live in 15 hours. It's happening late October, so check **HOTROD.COM** now for the coverage.

Car I Most Wanted to Build on the Day I Wrote This This will be the third time I've written this, which is some kind of record: I'm still stoked to finish up my Crop Duster. Steve Dulcich and I are building a 383 Mopar for it now.

Best Instagram Pic This Month



Wes Allison

[Ford let us drive the 2016 Mustang Shelby GT350 and GT350R at Laguna Seca just as we were going to press with this issue. The GT350R is reportedly 2 seconds quicker than Chevy's Z/28 around these famous curves.

Coming Next Month: 5 1/2 Dragstrips in 5 Days—One 707hp Dodge

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There's a certain camaraderie when it comes to wheels. If you see someone with the same manufacturer or same caliber of wheel, it creates an instant bond. But get caught riding dirty on a brand of wheels they don't approve of, and you'll soon become the butt of every joke. So if you're in the scene to be seen, you already know what I'm talking about. But if not, then it just doesn't matter. Either way, to each his own—and pick what you like.

Now that we're back for our annual installment of the Ultimate Wheel & Tire Guide, this issue is packed with all of the latest releases from some of the world's top brands. From imports to domestics, euros to SUVs, this guide is the largest and most comprehensive the market has seen.

Years back when we first launched, rim

manufacturers couldn't wait to launch the largest diameters, mated to the thinnest possible tires. But fast-forward to present day, and it seems as though the race is finally over. The general public now seems to have found a happy medium with 26s and 28s for trucks and SUVs. And when it comes to the sport compact market, fatter tires and smaller wheels are all the rage.

We've also seen manufacturers putting increased effort into making cast wheels, which mimic the detail and fitment of forged wheels. With consumers gravitating more toward financial savings over weight savings, these new cast wheels are gaining traction. Besides, most people don't track, and if you live in L.A., you're not going anywhere anytime soon with all this traffic.

So enjoy the issue and choose wisely!

With Respect,
John Jarasa

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Printed in the USA
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PLATINUM WHEELS

1A

RESERVED
VIP



410 DIVINE



NEW 412 OPULENT
Satin Graphite Grey, Gloss Black w/ Diamond Cut
FWD 16, 17, 18, 20



NEW 252 ALLURE
PVD, Gloss Black w/ Milled Accents,
CUV 17, 18, 20



419 RECLUSE
Gloss Black w/ Milled Accents & Black PVD
FWD 16x7, 17x7.5, 18x8, 20x8.5



081 ETWINE
Chrome, Silver
FWD 14x6, 15x7, 16x7, 17x7.5



418 WRATH
Gloss Black w/ Diamond Cut Face
FWD 15x7, 16x7, 17x7.5, 18x8, 20x8.5



NEW 410 DIVINE
Gloss Black w/ Milling & Diamond Cut RWD, Ultra PVD
FWD 16x7, 17x7.5, 18x8, 20x8.5, RWD 20x9, 22x9.5



291-292 SABER
Gloss Black with Diamond Cut Accents
FWD 16x7, 17x7.5, 18x8, 20x8



204 MANTIS
Gloss Black w/ Diamond Cut Face
FWD 15x7, 16x7, 17x7.5, 18x8





252 Allure

DIAMETER: 17, 18, 20
FINISHES: Ultra V Finish PVD, Gloss Black with milling
BOLT PATTERNS: 5x100, 5x114.3, 5x120, 5x127, 6x120
APPLICATIONS: CUV (crossovers), FWD passenger cars
WHEEL TYPE: One piece



410 Divine

DIAMETER: 16, 17, 18, 20, 22
FINISHES: Gloss Black with milling and diamond-cut accents, Ultra V finish PVD
BOLT PATTERNS: 4x100, 4x108, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x139.7, 6x135, 6x139.7
APPLICATIONS: FWD passenger vehicles, sport compact cars, CUV, muscle cars, street truck/SUV
WHEEL TYPE: One piece



412 Opulent

DIAMETER: 16, 17, 18, 20
FINISHES: Satin Graphite Grey, Gloss Black with diamond-cut face
BOLT PATTERNS: 5x100, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: FWD passenger cars, sport compact cars, CUV
WHEEL TYPE: One piece



212 Widow

DIAMETER: 17, 18, 20
FINISHES: Matte Black with Gloss Black inserts
BOLT PATTERNS: 5x100, 5x114.3, 5x115, 5x120
APPLICATIONS: FWD passenger cars, sport compact, CUV
WHEEL TYPE: One piece



418 Wraith

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Gloss Black with diamond-cut face
BOLT PATTERNS: 5x100, 5x105, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: FWD passenger cars, sport compact cars, CUV
WHEEL TYPE: One piece



419 Recluse

DIAMETER: 16, 17, 18, 20
FINISHES: Ultra V Finish Black PVD, Gloss Black with diamond-cut face
BOLT PATTERNS: 5x100, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: FWD passenger cars, sport compact cars
WHEEL TYPE: One piece



081 E-Twine

DIAMETER: 14, 15, 16, 17
FINISHES: Bright Silver, Chrome
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: FWD passenger cars, sport compact cars
WHEEL TYPE: One piece



204 Mantis

DIAMETER: 15, 16, 17, 18
FINISHES: Gloss Black with diamond-cut face
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: FWD passenger cars, sport compact cars, CUV
WHEEL TYPE: One piece



292 Saber

DIAMETER: 16, 17, 18
FINISHES: Gloss Black with diamond-cut accents
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: FWD passenger cars, sport compact cars, CUV
WHEEL TYPE: One piece

GLOSS BLACK
MACHINED FACE

THE WORD ON
THE STREET

GLOSS BLACK

GLOSS BLACK
MACHINED TIPS

MALATO

18•20•22

DOMANI

18•20•22•24

GLOSS BLACK
MACHINED FACE



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Perfetto

DIAMETER: 17, 18, 20, 22, 24, 26, 28, 30
FINISHES: Black machined, chrome, Black machined edge, Silver, Bronze
BOLT PATTERNS: 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x135, 5x139.7, 6x114.3, 6x115, 6x132, 6x135, 6x139.7
WHEEL TYPE: One piece



Domani

DIAMETER: 18, 20, 22, 24
FINISHES: Black machined, chrome, Black, Black machined lips
BOLT PATTERNS: 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x135, 5x139.7, 6x135, 6x139.7
WHEEL TYPE: One piece



Fuso

DIAMETER: 19, 20, 22
FINISHES: Black machined, Black, Gunmetal
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 5x120.7
WHEEL TYPE: One piece



Denaro

DIAMETER: 22, 24, 26
FINISHES: Black, machined, chrome
BOLT PATTERNS: 5x114.3, 5x115, 5x120, 5x127, 5x135, 5x139.7, 6x127, 6x135, 6x139.7
WHEEL TYPE: One piece



Malato

DIAMETER: 18, 20, 22
FINISHES: Black machined, chrome, Gold, Stealth Black, Gloss Black, Bronze
BOLT PATTERNS: 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



Stiletto

DIAMETER: 20, 22
FINISHES: Black machined, chrome, Stealth Black, Gloss Black
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



Magia

DIAMETER: 22, 24
FINISHES: Gloss Black machined, Stealth Black, Gloss Black, chrome
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 5x127, 5x135, 5x139.7, 6x115, 6x127, 6x139.7
WHEEL TYPE: One piece



Moda

DIAMETER: 18, 20, 22
FINISHES: Black machined, chrome, Stealth Black
BOLT PATTERNS: 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7
WHEEL TYPE: One piece



Veleno

DIAMETER: 17, 18, 20, 22
FINISHES: Black machined, chrome, Black
BOLT PATTERNS: 5x114.3
WHEEL TYPE: One piece

LIGHT

Up Your Life



In the past decade, we've seen it all. Spinners, clear wheels, custom finishes, floating wheels, and the list goes on. Yet as wheel companies battle to build the hype, we wait each year to feature the wild and the zany, and this year it's looking like Savini Wheels may have just lit up the competition.

The introduction of the company's new finish is sure to have you gleaming with envy. And while it's not for everyone, it will certainly be big news for those looking to stand out and make a statement. Savini Wheels' latest finish appears docile and standard during the day, but at night is when it comes to life. In association with Lumilor Lab, Savini Wheels teamed up to introduce an exclusive paint that illuminates when electricity is applied. Currently, the only colors available for this special paint are blue and green, but they're already in the works to expand the color palette.

Can this paint be applied to any of the wheels you carry or just select models?

To achieve this look, we use paint so you can apply it to any wheel in our lineup. You can also customize the pattern and dictate which parts light up.

What is the turnaround time to get this done?

From order to completion and delivery, it takes about six to eight weeks.

Which sizes will these wheels available in?

As of now, this optional coating will be available in our wheel lineup consisting of 19 through 22 inches, as well as 24 inches, 26 inches, 28 inches, 30 inches, 32 inches, and 34 inches.

I know this is still in the R&D phase, but how are you getting the power to the wheel?

Yes, we are currently in the R&D stage at the moment, but we do have one working and running model that is powered by a power pack and hub system, which will remain un-disclosed till its final release. By midsummer, we should have ironed out any kinks we might find while testing them out. All final details should be released by midsummer. **UWTF**

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Drag

Drag Wheels introduces the all new DR-62 model featuring a seamless split-spoke design and a flawless matte and gloss finish for tuning sophistication.

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DR-66

DIAMETER: 15, 17, 18
FINISHES: Flat Black full painted, Charcoal Gray full painted, Rally Bronze full painted, White full painted, Virtual chrome
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x114.3
WHEEL TYPE: One piece



DR-65

DIAMETER: 15
FINISHES: Gloss black machined face, Gold machined face, Silver machined face, Virtual chrome, White machined face
BOLT PATTERNS: 4x100
WHEEL TYPE: One piece



DR-64

DIAMETER: 20
FINISHES: Flat black full painted, Virtual chrome
BOLT PATTERNS: 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



DR-63

DIAMETER: 17, 18
FINISHES: Flat Black full painted, Gloss Black machined lip, Silver machined lip
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



DR-62

DIAMETER: 15, 16, 17, 18
FINISHES: Flat Black full painted, Gun Metal full painted
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



DR-60

DIAMETER: 18, 19, 20
FINISHES: Flat Black full painted, Flat Black machined face, Silver machined face
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



DR-58

DIAMETER: 16x8.25
FINISHES: Flat Black machined lip, Flat Black lip machined face, Gold machined lip, Silver machined lip
BOLT PATTERNS: 4x100, 4x114.3
WHEEL TYPE: One piece



DR-49

DIAMETER: 18
FINISHES: Flat Black full painted, Charcoal Gray full painted, Hyper Silver full painted
BOLT PATTERNS: 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece

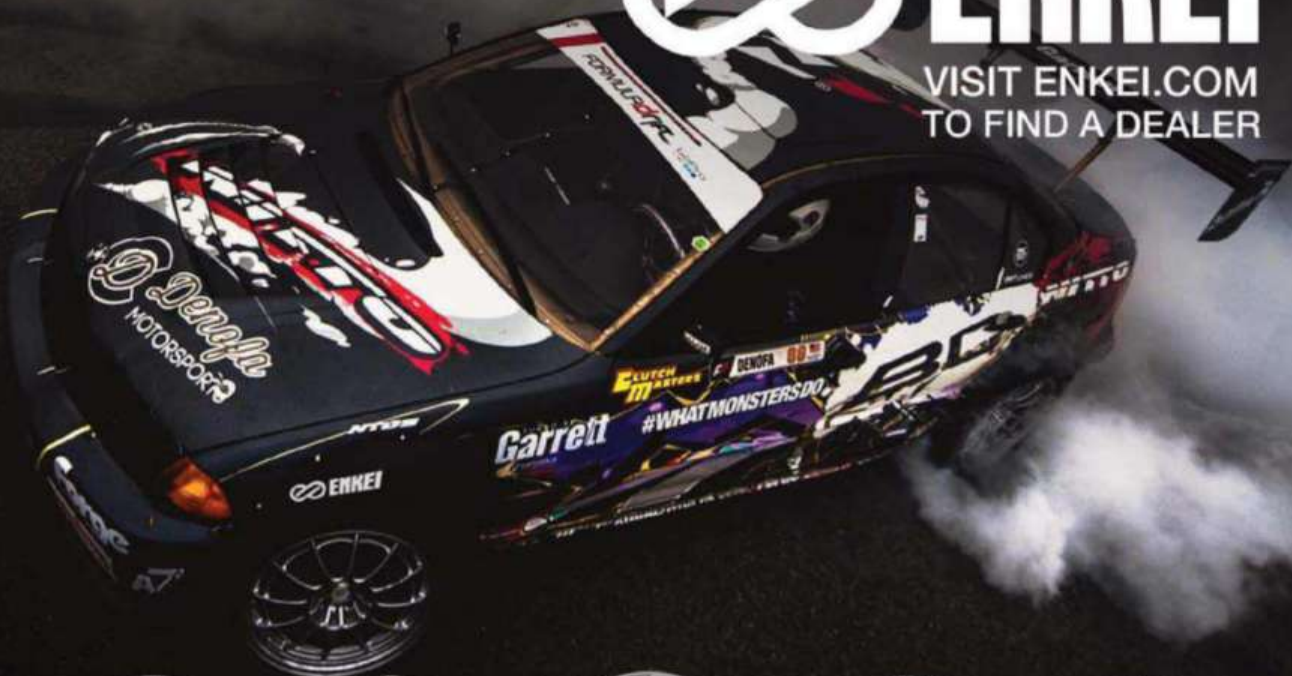


DR-54

DIAMETER: 15
FINISHES: Gloss Black machined lip, Gold machined lip
BOLT PATTERNS: 4x100, 4x114.3
WHEEL TYPE: One piece



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Tuning Series

RAIJIN - 18, 19
Tuning Series

BR7 - 16, 17, 18
Performance Series

RSF5 - 15, 16, 17, 18
Performance Series

M52 - 15, 16, 17, 18
Performance Series



COMPE - 15, 16
Classic Series

APACHE II - 15
Classic Series

JSPEED - 15
Classic Series

SR6 - 15, 16, 17, 18
Performance Series

LUSO - 18, 20
Performance Series



GP5 16, 17, 18
Performance Series

EKM3 17, 18
Performance Series

RAZR 18, 20
Performance Series

ST6 17, 18, 20
Truck & SUV Series

M5 17, 18, 20
Truck & SUV Series



PF01 EVO

DIAMETER: 17, 18
FINISHES: SSK, Pearl White, Matte Black
BOLT PATTERNS: 5x112, 5x114.3, 5x120
APPLICATIONS: Import and domestic cars
WHEEL TYPE: One piece



TS9

DIAMETER: 17, 18
FINISHES: Platinum Gray, Matte Black, Matte Silver
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3
APPLICATIONS: Import and domestic cars
WHEEL TYPE: One piece



TX5

DIAMETER: 17, 18
FINISHES: Platinum Gray, Matte Black
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
APPLICATIONS: Import and domestic cars
WHEEL TYPE: One piece



YS5

DIAMETER: 15, 16, 17, 18
FINISHES: Matte Black, Hyper Black
BOLT PATTERNS: 4x100, 5x108, 5x110, 5x114.3, 5x120
APPLICATIONS: Import and domestic cars
WHEEL TYPE: One piece



PSR5

DIAMETER: 15, 16, 17, 18
FINISHES: Hyper Black, Matte Black
BOLT PATTERNS: 4x100, 5x100, 5x110, 5x114.3
APPLICATIONS: Import and domestic cars
WHEEL TYPE: One piece



CUV

DIAMETER: 16, 17, 18, 20
FINISHES: Black Machined, Matte Gray
BOLT PATTERNS: 5x100, 5x110, 5x114.3, 5x120
APPLICATIONS: Domestic and Import small SUV
WHEEL TYPE: One piece



TENJIN

DIAMETER: 17, 18
FINISHES: Black with machined lip, Gunmetal with machined lip
BOLT PATTERNS: 5x100, 5x112, 5x114.3, 5x120
APPLICATIONS: Import and domestic cars
WHEEL TYPE: One piece



SR6

DIAMETER: 15, 16, 17, 18
FINISHES: Matte Black, Matte Bronze, Gunmetal
BOLT PATTERNS: 4x100, 5x100, 5x114.3
APPLICATIONS: Import and domestic cars
WHEEL TYPE: One piece



VR5

DIAMETER: 15, 16, 17, 18
FINISHES: Hyper Black, Matte Black
BOLT PATTERNS: 4x100, 5x108, 5x110, 5x112, 5x114.3, 5x120
APPLICATIONS: Import and domestic cars
WHEEL TYPE: One piece

FOCAL



NEW

422 F-007

15x6.5, 16x7, 17x8, 18x8

GLOSS BLACK W/ MILLED ACCENTS



NEW

442 F-15 NEW

16x7, 17x7.5, 18x8

GLOSS BLACK W/ DIAMOND CUT FACE
SATIN BLACK

NEW

444 F-06

16x7, 17x7.5, 18x8

GLOSS BLACK W/ DIAMOND CUT FACE
SATIN BLACK

NEW

446 F-13

15x8, 16x7, 17x8, 18x8

GLOSS BLACK W/ DIAMOND CUT FACE
SATIN BLACK



NEW

422 F-007

15x6.5, 16x7, 17x8, 18x8

SATIN BLACK

425 F-03

16x7, 17x7.5, 18x8

SATIN BLACK

428 F-04

15x6.5, 16x7, 17x7.5, 18x8

SATIN BLACK

429 HIGH V

16x7, 17x8, 18x8

SLATE GREY W/ DIAMOND
CUT LIP, SATIN BLACK

430 F-07

16x7, 17x8, 18x8

GLOSS BLACK W/
DIAMOND CUT FACE



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422 F-007

DIAMETER: 15, 16, 17, 18
FINISHES: Gloss Black with milled accents, Satin Black
BOLT PATTERNS: 4x100, 4x108, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x120
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece



442 F-15

DIAMETER: 16, 17, 18
FINISHES: Gloss Black with diamond-cut face, Satin Black
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece



444 F-06

DIAMETER: 16, 17, 18
FINISHES: Gloss Black with diamond-cut face, Satin Black
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece



446 F-13

DIAMETER: 15, 16, 17, 18
FINISHES: Satin Black, Gloss Black with diamond-cut face
BOLT PATTERNS: 4x100, 4x108, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece



421 X

DIAMETER: 15, 16, 17, 18
FINISHES: Satin Black, Matte Black with Red lip stripe
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x108, 5x112, 5x114.3, 5x120
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece



425 F-03

DIAMETER: 16, 17, 18
FINISHES: Satin Black with diamond-cut accents
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece



428 F-04

DIAMETER: 15, 16, 17, 18
FINISHES: Satin Black
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece



429 High V

DIAMETER: 16, 17, 18
FINISHES: Slate Grey with diamond-cut lip, Satin Black
BOLT PATTERNS: 5x100, 5x110, 5x112, 5x114.3, 5x120
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece



430 F-07

DIAMETER: 16, 17, 18
FINISHES: Gloss Black with diamond-cut face
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115
APPLICATIONS: Sport compact cars, FWD passenger cars
WHEEL TYPE: One piece

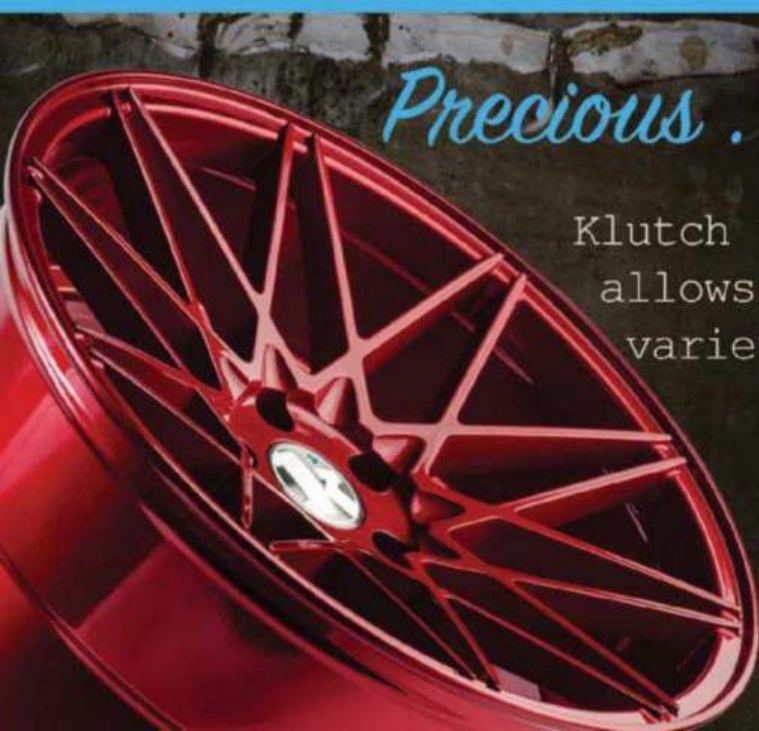
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KM20

DIAMETER: 19
FINISHES: Matte Bronze, Precious Coatings
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



KM20

DIAMETER: 19
FINISHES: Silver machined, Precious Coatings
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



SLC1

DIAMETER: 18
FINISHES: Silver, Precious Coatings
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



SL1

DIAMETER: 15, 16
FINISHES: Gold, Black, Silver, Precious Coatings
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x114.3
WHEEL TYPE: One piece



KM16

DIAMETER: 15, 16
FINISHES: Silver machined, Gunmetal machined, Precious Coatings
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x114.3
WHEEL TYPE: One piece



KM16

DIAMETER: 15, 16
FINISHES: Fusion Blue, Fusion Red, Precious Coatings
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x114.3
WHEEL TYPE: One piece



SL1

DIAMETER: 15, 16
FINISHES: Gold, Black, Bronze/Black, Precious Coatings
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x114.3
WHEEL TYPE: One piece



SL14

DIAMETER: 18
FINISHES: Silver machined, Matte Black, Precious Coatings
BOLT PATTERNS: 5x100, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



SL5

DIAMETER: 18
FINISHES: Silver machined chrome lip, Matte Black Gloss Bronze lip, Precious Coatings
BOLT PATTERNS: 5x100, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece

#KÖNIG WHEELS



INTEGRAM

18x9 ET27

Flow
Formed



Matte Graphite

Matte Black

17 x 8, 17 x 9, 18 x 8, 18 x 9, 18 x 10, 19 x 8.5, 19 x 9.5 - Low Offsets Available

Flow
Formed



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Interform

Flow
Formed

18", 19", 20"

Widths up to 9.5"
Low Offsets Available

Centigram

Flow
Formed

19"

Widths up to 10.5"
Low Offsets Available
Additional Finishes Available

Milligram

Flow
Formed

18"

Widths up to 10"
Low Offsets Available
Additional Finishes Available

Helix

Flow
Formed

15"

Widths up to 9"
Low Offsets Available
Additional Finishes Available



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Interform

DIAMETER: 18, 19, 20
FINISHES: Graphite with machined face
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120
APPLICATIONS: Flow formed; applications for front-wheel drive, rear-wheel drive, all-wheel drive, and staggered applications available
WHEEL TYPE: One piece



Tweak'd

DIAMETER: 15, 16, 17, 18
FINISHES: Gloss Black with Red stripe and Silver with full machine face
BOLT PATTERNS: 4x100, 5x100, 5x108, 5x112, 5x114.3
APPLICATIONS: Applications for most popular passenger vehicles; special 15x8 4x100 fitment available
WHEEL TYPE: One piece



Tweak'd

DIAMETER: 15, 16, 17, 18
FINISHES: Silver with full machine face and Black with Red stripe
BOLT PATTERNS: 4x100, 5x100, 5x108, 5x112, 5x114.3
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Runlite

DIAMETER: 16, 17, 18
FINISHES: Gold, Matte Grey, and Matte Black
BOLT PATTERNS: 4x100, 5x100, 5x108, 5x112, 5x114.3
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Runlite

DIAMETER: 16, 17, 18
FINISHES: Matte Black, Gold, and Matte Grey
BOLT PATTERNS: 4x100, 5x100, 5x108, 5x112, 5x114.3
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Runlite

DIAMETER: 16, 17, 18
FINISHES: Matte Grey, Black, and Gold
BOLT PATTERNS: 4x100, 5x100, 5x108, 5x112, 5x114.3
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Helix

DIAMETER: 15
FINISHES: Red (shown), Matte Black, Silver
BOLT PATTERNS: 4x100
APPLICATIONS: Flow formed; applications for 4x100 only; available in 15x7, 15x8, and 15x9. Extremely lightweight.
WHEEL TYPE: One piece



Dial In

DIAMETER: 15
FINISHES: Matte Grey (shown), Gloss Gold, Gloss Black, Gloss White
BOLT PATTERNS: 4x100
APPLICATIONS: Flow formed; applications for 4x100 only; available in 15x7, 15x8, and 15x9. Extremely lightweight.
WHEEL TYPE: One piece



Integram

DIAMETER: 17, 18, 19
FINISHES: Matte Black (shown), Matte Graphite
BOLT PATTERNS: 5x100, 5x114.3, 5x120
APPLICATIONS: Flow formed; applications for front-wheel drive, rear-wheel drive, all-wheel drive, and staggered applications; special fitments for EVO/350Z
WHEEL TYPE: One piece

#KÖNIG WHEELS



 **MILLIGRAM** 18x10 ET25
MATTE BLACK WITH MACHINED UNDERCUT

 **CONTROL**

14"	15"	16"	17"	18"
14X6	15X6.5	16X7	17X7	18X8

The Konig CONTROL features a 10-spoke design and a full range of fitments with diameters from 14" through 18".

Solution 




Matte Graphite / Full Machine
16x7.5, 17x8, 18x8

Inception 

Graphite / Full Machine
16x7.5, 17x8, 18x8

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Control

DIAMETER: 14, 15, 16, 17, 18
FINISHES: Silver (shown), Black
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x110, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Oversteer

DIAMETER: 16, 17, 18, 19, 20
FINISHES: Opel (shown), Gloss Black, Gloss White
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
APPLICATIONS: Applications for front-wheel drive, rear-wheel drive, all-wheel drive, and staggered applications; special 18x9 et22 fitments for EVO/250Z
WHEEL TYPE: One piece



Centigram

DIAMETER: 19
FINISHES: Matte Black with machined PCO, Gold with machined PCO (shown)
BOLT PATTERNS: 5x114.3
APPLICATIONS: Flow formed; applications for front-wheel drive, rear-wheel drive, rear-wheel drive, and staggered applications
WHEEL TYPE: One piece



Milligram

DIAMETER: 18
FINISHES: Matte Black with machined undercut (shown), Gold with machined undercut
BOLT PATTERNS: 5x114.3
APPLICATIONS: Flow formed; applications for front-wheel drive, rear-wheel drive, all-wheel drive, and staggered applications
WHEEL TYPE: One piece



Torch

DIAMETER: 17, 18, 19
FINISHES: Silver with ball-cut machined accents (shown), Matte Black with ball-cut machined accents
BOLT PATTERNS: 4x100, 5x100, 5x114.3
APPLICATIONS: Applications for front-wheel drive, rear-wheel drive, all-wheel drive, and staggered applications
WHEEL TYPE: One piece



Backbone

DIAMETER: 15, 16, 17, 18
FINISHES: Matte Black
BOLT PATTERNS: 4x100, 5x100, 5x114.3
APPLICATIONS: Applications for most popular applications
WHEEL TYPE: One piece



Deception

DIAMETER: 17, 18
FINISHES: Matte Black ball-cut machined spokes
BOLT PATTERNS: 4x100, 5x100, 5x114.3, 5x120
APPLICATIONS: Applications for front-wheel drive, rear-wheel drive, all-wheel drive; special application for EVO IN 18x9
WHEEL TYPE: One piece



Illusion

DIAMETER: 15, 17, 18, 19
FINISHES: Gloss Black with ball-cut Blue spokes (shown), Gloss Black with ball-cut Red spokes
BOLT PATTERNS: 4x100, 5x100, 5x110, 5x112, 5x114.3
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Z-In

DIAMETER: 14, 15, 16, 17, 18
FINISHES: Matte Black with machined face and red undercut
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x110, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles; special fitments for EVO/STI 18x9.5 ET 25/45
WHEEL TYPE: One piece

MAXXIM



Maze

Silver w/ Machine Face, Gloss Black w/ Red Stripe
15x6.5, 16x7, 17x7



Winner

Silver
14x6, 15x6.5, 16x7, 17x7, 18x8

Chance

Gloss Black w/ Machine Face & Lip
15x6.5, 16x7, 17x7



Champion

DIAMETER: 15, 16, 17
FINISHES: Black with machined lip
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x110, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Winner

DIAMETER: 14, 15, 16, 17, 18
FINISHES: Silver
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Maze

DIAMETER: 15, 16, 17, 18
FINISHES: Black with red stripe and Silver with machine face
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x110, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Chance

DIAMETER: 15, 16, 17
FINISHES: Gloss Black with machine lip and face
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x110, 5x112, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Allegro

DIAMETER: 16, 17, 18
FINISHES: Graphite with machined face
BOLT PATTERNS: 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x120
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Maze

DIAMETER: 15, 16, 17, 18
FINISHES: Black with red stripe and full Silver machined face
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x110, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Ferris

DIAMETER: 15, 16, 17, 18
FINISHES: Gloss Black with machine face
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x110, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Knight

DIAMETER: 15, 16, 17, 18
FINISHES: Gloss Black with machine lip
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x110, 5x114.3, 5x115
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece



Air

DIAMETER: 15
FINISHES: Matte Black (shown), Graphite with machine face
BOLT PATTERNS: 4x100
APPLICATIONS: Applications for most popular passenger vehicles
WHEEL TYPE: One piece

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Alpina

DIAMETER: 15, 16, 17, 18
FINISHES: Black machined
BOLT PATTERNS: 5x100, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Sport compact, import tuner, and European passenger cars
WHEEL TYPE: One piece



Alpina

DIAMETER: 15, 16, 17, 18
FINISHES: Charcoal machined
BOLT PATTERNS: 5x100, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Sport compact, import tuner, and European passenger cars
WHEEL TYPE: One piece



14

DIAMETER: 15, 16, 17
FINISHES: Matte Black
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115
APPLICATIONS: Sport compact, import tuner, and European passenger cars
WHEEL TYPE: One piece



Battle

DIAMETER: 17, 18
FINISHES: Matte Bronze and Matte Black
BOLT PATTERNS: 5x114.3
APPLICATIONS: Import tuner
WHEEL TYPE: One piece



Battle

DIAMETER: 17, 18
FINISHES: Matte Gunmetal
BOLT PATTERNS: 5x114.3
APPLICATIONS: Import tuner
WHEEL TYPE: One piece



14

DIAMETER: 15, 16, 17
FINISHES: Silver
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x115
APPLICATIONS: Sport compact, import tuner, and European passenger cars
WHEEL TYPE: One piece



Lovan

DIAMETER: 15, 16, 17, 18
FINISHES: Black machined
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x110, 5x114.3, 5x115
APPLICATIONS: Domestic, sport compact, import tuner and European passenger cars
WHEEL TYPE: One piece



Interline

DIAMETER: 15, 16, 17, 18
FINISHES: Gunmetal machined
BOLT PATTERNS: 4x100, 5x114.3
APPLICATIONS: Sport compact and import tuner passenger cars
WHEEL TYPE: One piece



Icon

DIAMETER: 15, 16, 17, 18
FINISHES: Gloss Black machined
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x110, 5x114.3, 5x115
APPLICATIONS: Sport compact, import tuner and European passenger cars
WHEEL TYPE: One piece



Old School

DIAMETER: 15, 17, 18, 20
FINISHES: Gunmetal machined and chrome
BOLT PATTERNS: 5x114.3, 5x120.65, 5x127
APPLICATIONS: Domestic muscle, hot rod and truck
WHEEL TYPE: One piece



Mesh X

DIAMETER: 14, 15, 16, 17
FINISHES: Silver machined
BOLT PATTERNS: 4x100, 5x100, 5x114.3
APPLICATIONS: Sport compact and import tuner passenger cars
WHEEL TYPE: One piece



Turbo

DIAMETER: 15, 16, 17, 18
FINISHES: Gloss Black machined
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x110, 5x114.3, 5x115
APPLICATIONS: Sport compact, import tuner, and European passenger cars
WHEEL TYPE: One piece



Sprite

DIAMETER: 14, 15, 16, 17
FINISHES: Silver machined
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x108, 5x114.3, 5x115
APPLICATIONS: Sport compact, import tuner, and European passenger cars
WHEEL TYPE: One piece



Weapon

DIAMETER: 15, 16, 17, 18
FINISHES: Gunmetal
BOLT PATTERNS: 4x100, 5x100, 5x114.3
APPLICATIONS: Sport compact and import tuner passenger cars
WHEEL TYPE: One piece



Weapon

DIAMETER: 15, 17, 18
FINISHES: Bronze
BOLT PATTERNS: 4x100, 5x100, 5x114.3
APPLICATIONS: Sport compact and import tuner passenger cars
WHEEL TYPE: One piece



Vector

DIAMETER: 14, 15, 16, 17, 18
FINISHES: Anthracite machined
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x110, 5x112, 5x114.3, 5x115
APPLICATIONS: Sport compact, import tuner, and European passenger cars
WHEEL TYPE: One piece



Twist

DIAMETER: 14, 15, 16, 17, 18
FINISHES: Gunmetal machined
BOLT PATTERNS: 4x100, 5x114.3
APPLICATIONS: Sport compact and import tuner passenger cars
WHEEL TYPE: One piece



Chaos 5

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Matte Black machined
BOLT PATTERNS: 5x114.3, 5x120.65, 5x127, 5x135, 5x139.7, 5x150
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Chaos 5

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Silver machined
BOLT PATTERNS: 5x114.3, 5x120.65, 5x127, 5x135, 5x139.7, 5x150
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Chaos 5

DIAMETER: 17, 18, 20
FINISHES: Chrome
BOLT PATTERNS: 5x127, 5x139.7, 5x150
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Chaos 6

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Matte Black machined
BOLT PATTERNS: 6x114.3, 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Chaos 6

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Silver machined
BOLT PATTERNS: 6x114.3, 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Chaos 6

DIAMETER: 16, 17, 18, 20
FINISHES: Chrome
BOLT PATTERNS: 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Chaos 8

DIAMETER: 16, 17
FINISHES: Matte Black machined
BOLT PATTERNS: 8x165.1, 8x170
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Chaos 8

DIAMETER: 16, 17
FINISHES: Silver machined
BOLT PATTERNS: 8x165.1, 8x170
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece

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R5

DIAMETER: 14, 15, 16, 17

FINISHES: Silver

BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x110, 5x114.3, 5x115

APPLICATIONS: Domestic and import passenger vehicles

WHEEL TYPE: One piece



R5

DIAMETER: 14, 15, 16, 17

FINISHES: Matte Black

BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x110, 5x114.3, 5x115

APPLICATIONS: Domestic and import passenger vehicles

WHEEL TYPE: One piece



R10

DIAMETER: 15, 16, 17

FINISHES: Silver

BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x110, 5x114.3, 5x115

APPLICATIONS: Domestic and import passenger vehicles

WHEEL TYPE: One piece



R20

DIAMETER: 15, 16, 17, 18

FINISHES: Matte Black

BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x110, 5x114.3, 5x115

APPLICATIONS: Domestic and import passenger vehicles

WHEEL TYPE: One piece



R20

DIAMETER: 15, 16, 17, 18

FINISHES: Silver

BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x110, 5x114.3, 5x115

APPLICATIONS: Domestic and import passenger vehicles

WHEEL TYPE: One piece



R10

DIAMETER: 15, 16, 17

FINISHES: Matte Black

BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x110, 5x114.3, 5x115

APPLICATIONS: Domestic and import passenger vehicles

WHEEL TYPE: One piece



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GRIP 16



ROKU 18



P1R 18



MXR 16



PWR 18|19|20



TITAN 17|18



SS10 17|18





Grip

DIAMETER: 16
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue
BOLT PATTERNS: 4x100
WHEEL TYPE: One piece



Kensei

DIAMETER: 15, 18
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue, Polished
BOLT PATTERNS: 4x100, 4x108, 4x110, 4x114.3, 5x100, 5x114.3
WHEEL TYPE: One piece



P1R

DIAMETER: 18
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue, Polished
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Recce

DIAMETER: 17
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue, Polished
BOLT PATTERNS: 5x100, 5x108, 5x114.3
WHEEL TYPE: One piece



MXR

DIAMETER: 18
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue, Polished
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Roku

DIAMETER: 18
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue, Polished
BOLT PATTERNS: 5x100, 5x108, 5x114.3
WHEEL TYPE: One piece



Titan

DIAMETER: 17, 18
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue, Polished
BOLT PATTERNS: 5x100, 5x108, 5x114.3
WHEEL TYPE: One piece



Wired

DIAMETER: 15
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue, Polished
BOLT PATTERNS: 4x100, 4x108, 4x110, 4x114.3
WHEEL TYPE: One piece



X04

DIAMETER: 15
FINISHES: Black, Bronze, Gold, Gunmetal, Red, Silver, White Pink, Hyper Black, Tilt Blue, Polished
BOLT PATTERNS: 4x100, 4x114.3
WHEEL TYPE: One piece

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BM13

DIAMETER: 19, 20, 22

FINISHES: Brushed Silver, Machined Black, Matte Black, Brushed Double Dark Tint, Brushed Gold, Brushed Teal, Brushed Red, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



BM12

DIAMETER: 19, 20, 22

FINISHES: Matte Black, Machined Black, Brushed Silver, Brushed Red, Brushed Teal, Brushed Gold, Brushed Double Dark Tint, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



BM11

DIAMETER: 19, 20, 22

FINISHES: Matte Black, Machined Black, Brushed Silver, Brushed Red, Brushed Bronze, Brushed Gold, Brushed Double Dark Tint, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



BM13

DIAMETER: 19, 20, 22

FINISHES: Brushed Silver, Machined Black, Matte Black, Brushed Double Dark Tint, Brushed Gold, Brushed Teal, Brushed Red, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



BM12

DIAMETER: 19, 20, 22

FINISHES: Matte Black, Machined Black, Brushed Silver, Brushed Red, Brushed Teal, Brushed Gold, Brushed Double Dark Tint, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



BM11

DIAMETER: 19, 20, 22

FINISHES: Matte Black, Machined Black, Brushed Silver, Brushed Red, Brushed Bronze, Brushed Gold, Brushed Double Dark Tint, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



BM13

DIAMETER: 19, 20, 22

FINISHES: Brushed Silver, Machined Black, Matte Black, Brushed Double Dark Tint, Brushed Gold, Brushed Teal, Brushed Red, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



BM12

DIAMETER: 19, 20, 22

FINISHES: Matte Black, Machined Black, Brushed Silver, Brushed Red, Brushed Teal, Brushed Gold, Brushed Double Dark Tint, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



BM11

DIAMETER: 19, 20, 22

FINISHES: Brushed Silver, Machined Black, Matte Black, Brushed Double Dark Tint, Brushed Gold, Brushed Bronze, Brushed Red, and custom options

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x127, 5x130

APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance

WHEEL TYPE: One piece



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ANDROS R9

DIAMETER: 17, 18
FINISHES: Machined with Light Grey accent
BOLT PATTERNS: 5x112, 5x114.3
WHEEL TYPE: One piece



ASA GT12

DIAMETER: 17, 18
FINISHES: Machined with Anthracite accent, Titanium Gunmetal
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3
WHEEL TYPE: One piece



Axis Sport XM

DIAMETER: 17, 18
FINISHES: Black painted, Matte Silver painted, Matte Graphite Silver
BOLT PATTERNS: 5x100, 5x112, 5x114.3
WHEEL TYPE: One piece



Enkei Performance Series YS5

DIAMETER: 15, 16, 17, 18
FINISHES: Gunmetal painted, Hyper Black, Black painted
BOLT PATTERNS: 4x100, 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Enkei Tuning Series TS9

DIAMETER: 17, 18
FINISHES: Platinum Grey, Matte Silver painted, Black painted
BOLT PATTERNS: 5x100, 5x108, 5x110, 5x112, 5x114.3
WHEEL TYPE: One piece



Enkei Tuning Series TX5

DIAMETER: 17, 18
FINISHES: Black painted, Platinum Grey
BOLT PATTERNS: 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Kosei K8R

DIAMETER: 15, 17
FINISHES: Light Grey painted, Silver painted
BOLT PATTERNS: 4x100, 4x108, 5x100, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



MSW Type 27

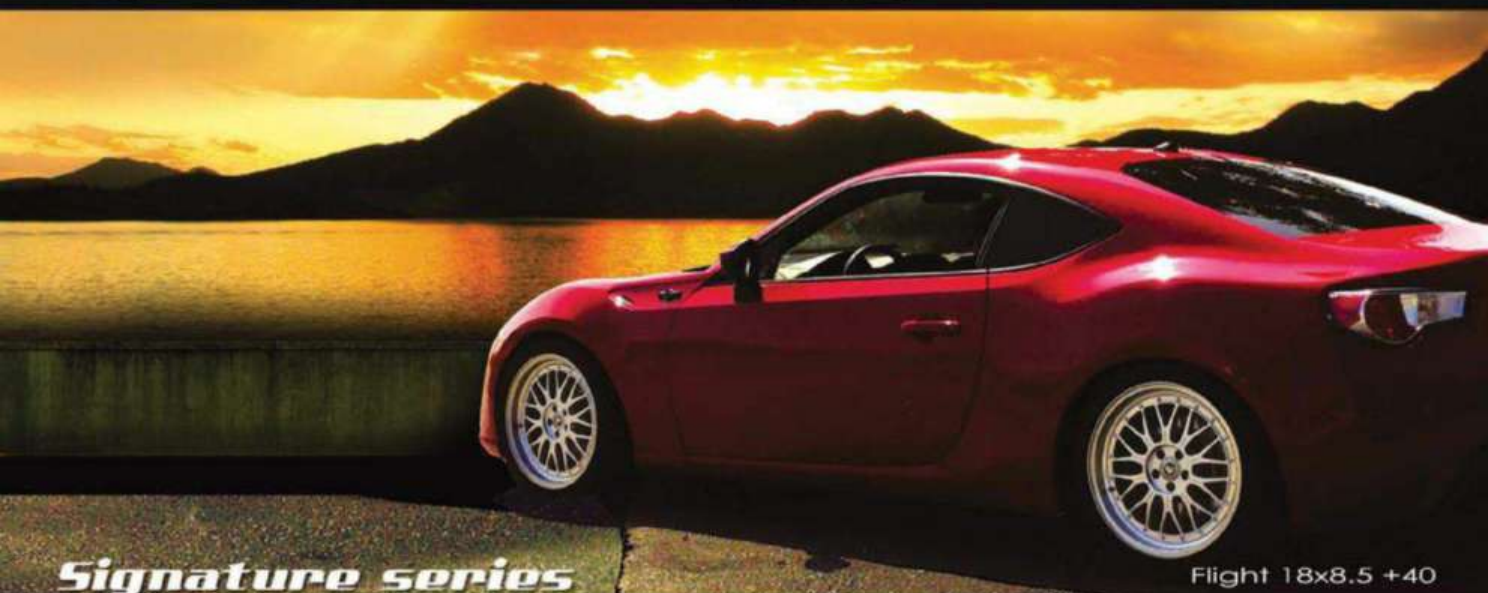
DIAMETER: 17, 18
FINISHES: Machined with Black accent, Black painted
BOLT PATTERNS: 5x100, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Sparco Assetto Gara

DIAMETER: 14, 15, 16, 17, 18
FINISHES: White painted, Matte Graphite Silver, Red, Orange, Green, Black, Bronze, Gold, Fuchsia, Purple
BOLT PATTERNS: 4x100, 4x108, 5x100, 5x105, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece

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Apex

DIAMETER: 15, 16, 17, 18
FINISHES: Hyper Silver
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import/domestic
WHEEL TYPE: One piece



Spira

DIAMETER: 15, 16, 17, 18
FINISHES: Silver
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import/domestic
WHEEL TYPE: One piece



Spin

DIAMETER: 18
FINISHES: Silver
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import/domestic
WHEEL TYPE: One piece



Boulder

DIAMETER: 17, 18
FINISHES: Hyper Silver
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x114.3, 6x132, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Import/domestic SUV/truck
WHEEL TYPE: One piece



Ravine

DIAMETER: 17, 18
FINISHES: Hyper Silver
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Import/domestic truck/SUV
WHEEL TYPE: One piece



Neptune

DIAMETER: 17
FINISHES: Hyper Silver
BOLT PATTERNS: 5x100, 5x110, 5x112, 5x114.3, 5x120
APPLICATIONS: Import/domestic
WHEEL TYPE: One piece



Spyder

DIAMETER: 16, 17
FINISHES: Hyper Silver
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import/domestic
WHEEL TYPE: One piece



Borzo

DIAMETER: 17
FINISHES: Hyper Silver
BOLT PATTERNS: 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x120
APPLICATIONS: Import/domestic
WHEEL TYPE: One piece



Momentum

DIAMETER: 15, 16, 17, 18
FINISHES: Hyper Silver
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115
APPLICATIONS: Import/domestic
WHEEL TYPE: One piece

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DESIGN

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D-77C

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DY37C

DIAMETER: 18
FINISHES: Machined face/stainless step lip
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x130
APPLICATIONS: Import and domestic vehicles
WHEEL TYPE: One piece



DY37C

DIAMETER: 18
FINISHES: Matte black with stainless step lip
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65
APPLICATIONS: Import and domestic
WHEEL TYPE: One piece



Champion

DIAMETER: 18
FINISHES: Silver/stainless step lip
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import and domestic
WHEEL TYPE: One piece



Champion

DIAMETER: 18
FINISHES: Bronze/stainless step lip
BOLT PATTERNS: 5x100, 5x114.3
APPLICATIONS: Most imports
WHEEL TYPE: One piece



D12C

DIAMETER: 18
FINISHES: Black with machined accents
BOLT PATTERNS: 5x100, 5x114.3
APPLICATIONS: Imports
WHEEL TYPE: One piece



D12C

DIAMETER: 18
FINISHES: Gunmetal ball cut finish
BOLT PATTERNS: 5x100, 5x114.3
APPLICATIONS: Imports
WHEEL TYPE: One piece



D5C

DIAMETER: 18
FINISHES: Matte Black/stainless step lip
BOLT PATTERNS: 5x100, 5x114.3
APPLICATIONS: Import and domestic
WHEEL TYPE: One piece



D5C

DIAMETER: 18
FINISHES: Matte Black/Gloss Gunmetal lip
BOLT PATTERNS: 5x100, 5x114.3
APPLICATIONS: Import
WHEEL TYPE: One piece



D77C

DIAMETER: 20
FINISHES: Black with CNC accents/stainless lip
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import and domestic
WHEEL TYPE: One piece

INVICT



TUS-Z

The evolution continues

Lexani has long been known for introducing radical new wheels, and this time around the company just released a new wheel called the Invictus-Z. This new wheel employs an array of trendsetting stand-alone characteristics that take personalized customization, extreme big brake clearance, and deep lip allure on a jaw-dropping journey. It's skillfully designed and engineered to achieve massive brake caliper and rotor clearance yet still perfectly fit today's extraordinarily high offset sport and luxury vehicles as only Lexani can do. Formulated from lightweight aluminum alloy, these length, tipped, concave, spoked stunners act as eye magnets perched in front of cavernous 5-inch-deep outer rim lips.

Traditionally, Lexani innovation has always been on the forefront when it comes to custom wheel design and styling. Leading the way once again, Lexani launches its revolutionary new Invictus-Z with removable accent spoke tips. Each spoke accent tip can be removed, allowing individual enthusiasts to apply custom colors in combinations as they see fit. It's a fully customizable wheel with plenty of options, so give them a call or visit them online at lexani.com. **UW TG**



TRUE TO FORM

Rotiform launches new wheel styles and shares its suggested mild-to-wild fitments for your Audi.

A wheel isn't just a wheel. It's an extension of your personality, style, and pocketbook. Much like a Rolex doesn't compare to a Timex, wheels are a fashion statement that can make or break your car. Ask any purist who's truly into the wheel game and they'll tell you firsthand that there really is a difference.

Rotiform has long been making noise and creating waves, but now the company is back with some new styles that are sure to please. Remember, wheels are much more than just tire holders. They're the one mod on your car that gives it character and connection and the only mod to evoke emotion and attitude. For us to explain these new wheels by Rotiform would be an absolute waste of time, so enjoy the visuals and see which styles best suit your taste. **UWTG**





TRUE TO FORM

Model Line	Chassis	Years	Body Type	Bolt Pattern	OEM Lug Pattern	Center Bore	Semi-Aggressive Width and ET F/R	Aggressive Width and ET F/R
A3	8P	2003-2013	five-door hatch	5x112 mm	14 mm x 1.5	57.1 mm	18 x 8.5" et45/18 x 8.5" et45	19 x 8.5" et45/19 x 8.5" et43
	8V	2014-current	sedan	5x112 mm	14 mm x 1.5	57.1 mm	19 x 8.5" et45/19 x 8.5" et45	19 x 9.0" et39/19 x 9.0" et39
A4/S4	B5	1997-2001	sedan/wagon	5x112 mm	14 mm x 1.5	57.1 mm	18 x 8.5" et35/18 x 8.5" et35	19 x 9.0" et38/19 x 9.5" et38
	B6/B7	2002-2008	sedan/wagon	5x112 mm	14 mm x 1.5	57.1 mm	18 x 8.5" et35/18 x 8.5" et35	19 x 9" et35/19 x 10" et 38
	B8	2009-current	sedan/wagon	5x112 mm	14 mm x 1.5	66.56 mm	20 x 9.5" et38/20 x 9.5" et38	20 x 10" et35/20 x 11" et40
RS4	B7	2006-2008	sedan	5x112 mm	14 mm x 1.5	57.1 mm	19 x 10" et29/19 x 10" et29	19 x 10" et25/19 x 11" et29
A6/S6	C5 A6	1997-2004	sedan/wagon	5x112 mm	14 mm x 1.5	57.1 mm	18 x 8.5" et35/18 x 8.5" et35	19 x 9.0" et38/19 x 9.5" et38
	C5 S6/RS6	1999-2003	sedan/wagon	5x112 mm	14 mm x 1.5	57.1 mm	19 x 10" et35/19 x 10" et35	19 x 10" et30/19 x 11" et30
	C6 A6	2004-2011	sedan/wagon	5x112 mm	14 mm x 1.5	57.1 mm	19 x 8.5" et45/19 x 8.5" et45	20 x 9 et40/20 x 9 et40
TT	C7	2012-current	sedan	5x112 mm	14 mm x 1.5	66.56 mm	20 x 8.5" et35/20 x 8.5" et35	20 x 10" et35/20 x 10" et35
	8N	2000-2006	two-door coupe	5x100 mm	14 mm x 1.5	57.1 mm	18 x 8.5" et30/18 x 8.5" et30	18 x 8.5" et30/18 x 9.5" et35
	8J	2006-current	two-door coupe	5x112 mm	14 mm x 1.5	57.1 mm	19 x 8.5" et45/19 x 8.5" et45	19 x 9.0" et38/19 x 9.5" et38
A5/S5	8T	2007-current	two-door coupe	5x112 mm	14 mm x 1.5	66.56 mm	20 x 9" et30/20 x 9" et30	20 x 10" et35/20 x 11" et38
A7/S7	C7	2012-current	sedan	5x112 mm	14 mm x 1.5	66.56 mm	20 x 8.5" et35/20 x 8.5" et35	20 x 10" et30/20 x 10" et30
A8	D2	1994-2002	four-door sedan	5x112 mm	14 mm x 1.5	57.1 mm	19 x 8.5" et35/19 x 8.5" et35	19 x 10" et35/19 x 10" et30
	D3	2003-2009	four-door sedan	5x112 mm	14 mm x 1.5	57.1 mm	20 x 9" et40/20 x 9" et40	21 x 10.5" et38/21 x 10.5" et38
	Type42	2006-current	two-door coupe	5x112 mm	14 mm x 1.5	57.1 mm	20 x 9" et46/20 x 11" et45	20 x 9.5" et48/20 x 11.5" et48
Q5	8R	2006-current	Small SUV	5x112 mm	14 mm x 1.5	66.56 mm	20 x 9" et32/20 x 9" et32	21 x 10.5" et28/21 x 10.5" et28
Q7	4L	2005-current	SUV	5x130 mm	14 mm x 1.5	71.6 mm	21 x 10.5" et52/21 x 10.5" et52	24 x 10.5" et50/24 x 10.5" et50





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CH-R II

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FI-R

DIAMETER: 19, 20
FINISHES: Platinum Silver, Satin Black, Ceramic Polish (Select Custom)
BOLT PATTERNS: 5x130, 5x120 in summer 2015)
APPLICATIONS: Porsche, (BMW in summer 2015)
WHEEL TYPE: One piece forged



CI-R

DIAMETER: 20
FINISHES: Platinum Silver
BOLT PATTERNS: 5x112, 5x114.3, 5x120
APPLICATIONS: Audi, BMW, Chevy, Camaro, Honda, Hyundai, Kia, Lexus, Mazda, Mercedes, Nissan, Tesla, Toyota, Volkswagen
WHEEL TYPE: One piece flow formed



CH-R II

DIAMETER: 21
FINISHES: Satin Black, Platinum
BOLT PATTERNS: 5x112, 5x120, 5x130
APPLICATIONS: Audi, BMW, Chevy, Camaro, Mercedes, Porsche, Tesla, Volkswagen
WHEEL TYPE: Two piece flow formed



CH-R

DIAMETER: 18, 19, 20
FINISHES: Silver, Titanium, Satin Black
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x115, 5x120, 5x130
APPLICATIONS: Audi, BMW, Cadillac, CTS, Camaro, Chrysler, Ford, Honda, Hyundai, Jaguar, Kia, Lexus, Mazda, Mercedes, Mitsubishi, Nissan, Porsche, Suzuki, Toyota, Volkswagen, Volvo
WHEEL TYPE: One piece flow formed



SR

DIAMETER: 16, 17, 18, 19
FINISHES: Volcano Grey with diamond-cut face, Satin Himalaya Grey
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x115, 5x120, 5x130
APPLICATIONS: Audi, BMW, Chevrolet, Ford, Honda, Hyundai, Kia, Land Rover, Lexus, Mazda, Mercedes, Mini, Mitsubishi, Nissan, Porsche, Suzuki, Toyota, Volkswagen, Volvo
WHEEL TYPE: One piece



LM

DIAMETER: 17, 18, 19, 20
FINISHES: Silver Center with diamond-cut outer rim, Diamond Black center with diamond-cut outer rim
BOLT PATTERNS: 4x100, 5x108, 5x112, 5x114.3, 5x120, 5x130
APPLICATIONS: Acura, Audi, BMW, Honda, Infinity, Lexus, Mazda, Mercedes, Porsche, Toyota, Volkswagen
WHEEL TYPE: Two piece forged



XA

DIAMETER: 18, 19, 20
FINISHES: Platinum, Black with machined face
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120
APPLICATIONS: Audi, BMW, Ford, Honda, Hyundai, Jaguar, Kia, Land Rover, Lexus, Mazda, Mercedes, Nissan, Seat, Suzuki, Toyota, Volkswagen
WHEEL TYPE: One piece



SV

DIAMETER: 19, 20, 22
FINISHES: Titanium, Black with diamond-cut face
BOLT PATTERNS: 5x108, 5x112, 5x120, 5x130
APPLICATIONS: Audi Q7, BMW X3, X5, X5M, X6, Land Rover Evoque, Mercedes ML, GL, GLK, Volkswagen
WHEEL TYPE: One piece flow formed



RD-Truck

DIAMETER: 20, 22
FINISHES: Silver with polished lip
BOLT PATTERNS: 6x139.7
APPLICATIONS: Chevy trucks, GMC trucks, Nissan Armada
WHEEL TYPE: One piece

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530

DIAMETER: 18, 19, 20, 21, 22

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury performance, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece



600

DIAMETER: 18, 19, 20, 21, 22, 24, 26

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury/exotic, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece



180

DIAMETER: 18, 19, 20, 21, 22

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury/exotic, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece



200

DIAMETER: 18, 19, 20, 21, 22, 23, 24, 26

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury/exotic, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece



266

DIAMETER: 18, 19, 20, 21, 22

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury/exotic, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece



570

DIAMETER: 18, 19, 20, 21, 22, 23, 24, 26

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury/exotic, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece



650

DIAMETER: 18, 19, 20, 21, 22

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury/exotic, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece



500

DIAMETER: 18, 19, 20, 21, 22, 23, 24, 26

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury/exotic, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece



710

DIAMETER: 18, 19, 20, 21, 22

FINISHES: Available in a variety of powdercoated gloss finishes, matte finishes, and brushed clears as well as polished and chrome plated. Visit bforgedwheels.com for the latest.

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65

APPLICATIONS: Luxury/exotic, modern muscle, classic muscle, pro touring

WHEEL TYPE: Three piece





BD-3

DIAMETER: 19, 20, 22

FINISHES: Matte Graphite/Matte Graphite with machined face/Silver with polished face

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece



BD-8

DIAMETER: 20, 22

FINISHES: Silver with polished face/Matte Black with gloss-black lip

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece



BD-9

DIAMETER: 22, 24

FINISHES: Matte Graphite/Matte Graphite with machined face/Silver with polished face/Full Black, Black with machined

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece



BD-3

DIAMETER: 19, 20, 22

FINISHES: Matte Graphite/Matte Graphite with machined face/Silver with polished face

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece



BD-8

DIAMETER: 20, 22

FINISHES: Silver with polished face/Matte Black with gloss-black lip

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece



BD-9

DIAMETER: 22, 24

FINISHES: Matte Graphite/Matte Graphite with machined face/Silver with polished face/Full Black, Black with machined

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece



BD-1

DIAMETER: 20, 22

FINISHES: Matte Graphite/Matte Graphite with machined face/Silver with polished face/Semi-Matte Black

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece



BD-2

DIAMETER: 20, 22

FINISHES: Matte Graphite with machined face/Matte Graphite/Matte Black with machined face/Silver with polished face

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece



BD-6

DIAMETER: 20, 22

FINISHES: Matte Graphite with machined face/Semi-Matte Black/Silver with polished face/Matte Graphite

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127

APPLICATIONS: Cars, luxury cars, sports cars

WHEEL TYPE: One piece

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CS-10

DIAMETER: 20

FINISHES: Matte Gunmetal chrome lip, Matte Silver machined chrome lip, Matte Black machined Gloss Black lip

BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120

WHEEL TYPE: One piece



CS-20

DIAMETER: 20

FINISHES: Silver machined chrome lip

BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120

WHEEL TYPE: One piece



CS-16

DIAMETER: 19, 20

FINISHES: Silver machined chrome lip, Gunmetal chrome lip

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120

WHEEL TYPE: One piece



CS-55

DIAMETER: 20, 22

FINISHES: Matte Gunmetal brushed face chrome lip, Silver machined chrome lip

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120

WHEEL TYPE: One piece



CSM-5

DIAMETER: 20

FINISHES: Matte Gunmetal brushed face machined, Silver machined, custom powdercoat options available

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127, 5x130

WHEEL TYPE: One piece



CS-6.0

DIAMETER: 20, 22

FINISHES: Matte Black Gloss Black lip, Silver machined chrome lip

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127, 5x130

WHEEL TYPE: One piece



CSM-7

DIAMETER: 20

FINISHES: Matte Silver machined, Matte Gunmetal machined, custom powdercoating available

BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120

WHEEL TYPE: One piece



CSL-5.5

DIAMETER: 19

FINISHES: Silver machined chrome lip, Matte Black Gloss Black lip

BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120

WHEEL TYPE: One piece



RS-55

DIAMETER: 20, 22

FINISHES: Matte Black machined chrome lip, silver machined chrome lip

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120

WHEEL TYPE: One piece

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RT57

DIAMETER: 18, 20
FINISHES: Gloss Black/Reverse CNC
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import/Domestic
WHEEL TYPE: One piece



RT7M

DIAMETER: 15, 16, 17, 18, 20, 22
FINISHES: Gloss Black/CNC Reverse
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x130
APPLICATIONS: Import/Domestic
WHEEL TYPE: One piece



RT-87

DIAMETER: 18
FINISHES: Matte Black/CNC Reverse
BOLT PATTERN: 5x100, 5x114.3
APPLICATIONS: Import/Domestic
WHEEL TYPE: One piece



LX-52

DIAMETER: 20
FINISHES: Black/CNC Reverse/Stainless lip
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import/Domestic
WHEEL TYPE: One piece



RT-6

DIAMETER: 18, 20
FINISHES: Gloss Black/Reverse CNC, Matte Gunmetal/Reverse CNC
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x130
APPLICATIONS: Import/Domestic
WHEEL TYPE: One piece



RT-Nova

DIAMETER: 20
FINISHES: Black/CNC Reverse, Silver/CNC Reverse
BOLT PATTERN: 5x112, 5x114.3, 5x115, 5x120, 5x130
APPLICATIONS: Import/Domestic
WHEEL TYPE: One piece



RT-11

DIAMETER: 18
FINISHES: Black/CNC Reverse
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import/Domestic
WHEEL TYPE: One piece



ORC909

DIAMETER: 17, 18, 20, 22
FINISHES: Black/Reverse CNC, Matte Gunmetal/Reverse CNC
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x114.3, 6x127, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Truck/SUV
WHEEL TYPE: One piece



ORC952

DIAMETER: 17, 18, 20
FINISHES: Black/Reverse CNC, Matte Gunmetal/Reverse CNC
BOLT PATTERN: 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Import/Domestic, truck, SUV
WHEEL TYPE: One piece



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STC-01

DIAMETER: 20, 22
FINISHES: Black milled, Titanium milled, Silver milled
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece



STC-02

DIAMETER: 20, 22
FINISHES: Titanium, Black, optional milled accents, Silver
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece



KVI

DIAMETER: 19, 20, 22
FINISHES: Titanium, Black, optional machined face, Silver
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120, 5x130
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece



STC-05

DIAMETER: 20
FINISHES: Matte Black, Titanium, optional milled accents, optional machined face
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127, 5x130
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece



STC-MS

DIAMETER: 20
FINISHES: Matte Black, Titanium, optional milled accents, optional machined face
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127, 5x130
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece



STC-10

DIAMETER: 19, 20, 22
FINISHES: Matte Black, Titanium, optional milled accents, optional machined face
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127, 5x130
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece



STC-F1

DIAMETER: 20, 21, 22
FINISHES: Titanium milled, Anodized Black, Silver milled
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120, 5x130
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece



9Forged

DIAMETER: 19, 20, 21
FINISHES: Matte Black, Titanium, Silver, optional machined face
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120, 5x130
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece



9RR

DIAMETER: 17, 18, 19, 20
FINISHES: Gloss Silver, Matte Black, Matte Black Milled, Titanium, Gold, White
BOLT PATTERNS: 4x100, 4x98, 5x100, 5x108, 5x112, 5x114.3, 5x120, 5x130
APPLICATIONS: Staggered applications for passenger vehicles
WHEEL TYPE: One piece

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R-TWELVE

(BLK/MACHINED TIP / SS LIP
20X8.5, 20X10, 22X9, 22X10)

POLARIS

(BLK/MACHINED/SS LIP
20X8.5, 20X10, 22X9, 22X10, PAT. PENDING)

HYDRA

(BLK/MACHINED/SS LIP
22X9, 22X10, 24X9, 24X10, 26X9.5 PAT. PENDING)

INVICTUS-Z

REMOVABLE ALUMINUM SPOKE EXTENSION
(BLK/MACHINED/SS, 20X8.5, 20X10, 22X9, 22X10, 24X9, 24X10, PAT. PENDING)



CSS-7 BLK/MACHINED TIP
17X7.5, 18X9, 20X8.5, 20X10, 22X9, 22X10

CSS-8 BLK/MACHINED
20X8.5, 20X10, 22X9, 22X10

CSS-10 BLK/MACHINED
20X8.5, 20X10, 22X9, 22X10

CSS-15 BLK/MACHINED
20X8.5, 20X10, 22X9, 22X10, 24X9, 24X10, 26X9.5

CSS-16 BLK/MACHINED
20X8.5, 20X10

INVICTUS-Z BLK/SS LIP
20X8.5, 20X10, 22X9, 22X10, 24X9, 24X10



INVICTUS-Z CUSTOM
20X8.5, 20X10, 22X9, 22X10, 24X9, 24X10

R-TWELVE CUSTOM
20X8.5, 20X10, 22X9, 22X10

R-SEVENTEEN CUSTOM
22X9, 22X10

R-SIX BLK/MACHINED
17X7.5, 18X9, 20X8.5, 20X10, 22X9, 22X10, 24X10, 26X10

R-FOUR CUSTOM
20X8.5, 20X10, 22X9, 22X10

R-THREE CUSTOM
20X8.5, 20X10, 22X9, 22X10



JOHNSON II BLK/MACHINED
22, 24, 26, 28, 30

R-FOUR CAPPED/CHROME
24X9, 24X10, 26X9.5

LUST BLK/MACHINED
17, 18, 20, 22, 24, 26, 28, 30

TRISTO CHROME
24X9, 26X9.5

ARTE BLK/MACHINED
24X9, 26X9.5

ROYAL SS LIP
24X9, 26X9.5

INVICTUS-Z

UTILITY PATENT PENDING



CSS-15

PART FINISH, LEXANI "MILAN" GILLES KIT



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R-Twelve (Black/Machined Tips)

DIAMETER: 20, 22

FINISHES: Black/machined face with stainless steel chrome lip, Black/machined face, Black/machined tips, and custom finish

BOLT PATTERNS: 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7

APPLICATIONS: Exotics, luxury, trucks and SUVs

WHEEL TYPE: One piece



CSS-15 (Black/Machined Tips)

DIAMETER: 20, 22, 24, 26

FINISHES: Black/machined face, Black/machined tips, all chrome, and custom finish

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7

APPLICATIONS: Exotics, luxury, trucks and SUVs

WHEEL TYPE: One piece



CSS-7 (optional 2 tone finish shown)

DIAMETER: 17, 18, 20, 22

FINISHES: Black/machined face, Black/machined tips, all chrome, and custom finish

BOLT PATTERNS: 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x158, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7

APPLICATIONS: Exotics, luxury, trucks and SUVs

WHEEL TYPE: One piece



CSS-8 (custom color finish)

DIAMETER: 20, 22

FINISHES: Black/machined face, Black/machined accents, all chrome, and custom finish

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7

APPLICATIONS: Black/machined face, Black/machined tips, all chrome, and custom finish

WHEEL TYPE: One piece



CSS-10 (custom color finish)

DIAMETER: 20, 22

FINISHES: Black/machined face, Black/machined accents, all chrome, and custom finish

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7

APPLICATIONS: Exotics, luxury, trucks and SUVs

WHEEL TYPE: One piece



R-Three (optional color finish)

DIAMETER: 20, 22

FINISHES: Black/machined face, Black/machined accents, all chrome, and custom finish

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7

APPLICATIONS: Exotics, luxury, trucks and SUVs

WHEEL TYPE: One piece



New Invictus-Z (custom gold metal spoke extension shown)

DIAMETER: 20, 22, 24

FINISHES: Black/machined face with stainless steel chrome lip, Black with stainless steel chrome lip, custom finish

BOLT PATTERNS: 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120.65, 5x120.7, 5x127

APPLICATIONS: Exotics, luxury, trucks and SUVs

WHEEL TYPE: One piece



New Hydra (custom white face shown)

DIAMETER: 22, 24, 26

FINISHES: Black/machined face with stainless steel chrome lip, Black/machined face, all chrome, and custom finish

BOLT PATTERNS: 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7

APPLICATIONS: Exotics, luxury, trucks and SUVs

WHEEL TYPE: One piece



New Polaris (custom finish shown)

DIAMETER: 20, 22

FINISHES: Black/machined face with stainless steel chrome lip, Black with machined accents, and custom finish

BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7

APPLICATIONS: Exotics, luxury, trucks and SUVs

WHEEL TYPE: One piece

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LF-734 CAMUS CUSTOM FINISH



LF-113 CUSTOM FINISH



LZ-740 ARCANA
CUSTOM FINISH

LC-735 MACELLAN
CUSTOM GOLD

LF-738 REGAL
CUSTOM FINISH

LF-737 OPUS
CUSTOM FINISH

LC-735 NICKLE
CUSTOM GOLD

LF-734 VIRGO
CUSTOM GOLD



LF-733 INSIGNIA
CUSTOM FINISH

LC-732 VIRGO
CUSTOM FINISH

LF-730 LEO
CUSTOM FINISH

LF-729 TAURUS
CUSTOM FINISH

LF-728 GEMINI
CUSTOM FINISH

LF-727 LIBRA
CUSTOM FINISH



LF-726 SCORPIO
CUSTOM FINISH

LF-723
CUSTOM FINISH

LC-722
CUSTOM 2TONE FINISH

LF-718
CUSTOM GOLD FINISH

LF-712
CUSTOM FINISH

LS-707
CUSTOM FINISH



LS-118
CUSTOM FINISH

LF-112
CUSTOM FINISH

LF-111
CUSTOM FINISH

LF-110
CUSTOM FINISH

LC-109
CUSTOM FINISH

LC-101
CUSTOM FINISH



M-102
DOUBLE DARK TINT

M-118
CUSTOM FINISH

M-106
CUSTOM GOLD

M-105
CUSTOM FINISH

M-102
CUSTOM FINISH

M-101
CUSTOM FINISH



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New LF-114 Sport

DIAMETER: 19, 20, 21, 22, 24, 26
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Exotics, luxury, trucks and SUVs
WHEEL TYPE: Three piece



New LF-748 Stinger

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Exotics, luxury, trucks and SUVs
WHEEL TYPE: Three piece



New LF-747 Viper

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Exotics, luxury, trucks and SUVs
WHEEL TYPE: Three piece



New LF-746 Babaria

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Chrome, Black, White, Silver, Brushed, and custom finishes
WHEEL TYPE: Three piece



New LF-745 Calypso

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Exotics, luxury, trucks and SUVs
WHEEL TYPE: Three piece



New LF-744 Twister

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Chrome, Black, White, Silver, Brushed, and custom finishes
WHEEL TYPE: Three piece



New LF-743 Spartacus

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Exotics, luxury, trucks and SUVs
WHEEL TYPE: Three piece



New LF-736 Profile

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Exotics, luxury, trucks and SUVs
WHEEL TYPE: Three piece



New LF-731 Pisces

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Chrome, Black, White, Silver, Brushed, and custom finishes
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Exotics, luxury, trucks and SUVs
WHEEL TYPE: Three piece



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414BM Modena

DIAMETER: 18, 20
FINISHES: Gloss Black with CNC-milled accents
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



414MB Modena

DIAMETER: 18, 20
FINISHES: Mirror-machined face with gloss-black accents
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



415MB Mythic

DIAMETER: 18, 20, 22
FINISHES: Gloss Black with mirror-machined accents
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 6x135, 6x139.7
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



410BM Maranello

DIAMETER: 18, 20, 22
FINISHES: Gloss Black with CNC-milled accents
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



410MB Maranello

DIAMETER: 18, 20, 22
FINISHES: Mirror-machined face with gloss-black accents
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



407MB Majestic

DIAMETER: 18, 20, 22
FINISHES: Mirror-machined face and lip with gloss-black accents
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



409B Magellan

DIAMETER: 18, 20
FINISHES: Satin Black
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



409MB Magellan

DIAMETER: 18, 20
FINISHES: Mirror-machined face with gloss-black accents
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



— Citrine | M155 | bronze | 18x8+40 - 18x9.5+40



— Misano | M116 | anthracite | 20x9+25 - 20x10.5+30

Form | M157 | charcoal | 20x8.5 +25 - 20x10.5+30





Form

DIAMETER: 19, 20
FINISHES: Bronze, Charcoal
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Citrine

DIAMETER: 18, 19, 20
FINISHES: White and machined, Silver and machined, Bronze
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Intake

DIAMETER: 20, 22
FINISHES: Black and milled with Dark Tint, Silver and machined
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120, 5x127, 5x130
WHEEL TYPE: One piece



Invert

DIAMETER: 20
FINISHES: Silver and machined, Black and machined with Dark Tint
BOLT PATTERNS: 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Surge

DIAMETER: 19, 20, 22
FINISHES: Silver and machined, Black and machined with Dark Tint
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



Enyo

DIAMETER: 20
FINISHES: Black and machined with Dark Tint
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120
WHEEL TYPE: One piece



Misano

DIAMETER: 17, 18, 19, 20
FINISHES: Anthracite, Satin Black
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Vicenza

DIAMETER: 20
FINISHES: Black Chrome PVD, Black and machined with Dark Tint
BOLT PATTERNS: 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Verona

DIAMETER: 17, 18, 19, 20, 22, 24
FINISHES: Black and machined with Dark Tint, White and machined, Anthracite
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x115, 5x120, 5x130
WHEEL TYPE: One piece

THEY ALL LAUGH AT ME
BECAUSE I'M DIFFERENT.
I LAUGH AT THEM BECAUSE
THEY'RE ALL THE SAME.

- Kurt Cobain



Have fun, stop taking shit so seriously.



EST

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SPF

DIAMETER: 18, 19, 20
FINISHES: Black and machined with Dark Tint, Silver and machined, Satin Black
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



NUE

DIAMETER: 18, 19
FINISHES: Satin Black, Black and machined with Dark Tint, Silver and machined
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



BLQ

DIAMETER: 18, 19, 20
FINISHES: Satin Black, Black and machined with Dark Tint, Silver and machined
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



IND-T

DIAMETER: 18, 19, 20
FINISHES: Silver and machined, Satin Black, Black and machined with Dark Tint
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



TMB

DIAMETER: 18, 19
FINISHES: Silver and machined, Satin Black, Black and machined with Dark Tint
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



BLQ-T

DIAMETER: 15, 16, 17, 18, 19, 20, 21, 22
FINISHES: Custom Finished
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Custom widths, bolt patterns, and offsets available
WHEEL TYPE: Three piece



TMB

DIAMETER: 15, 16, 17, 18, 19, 20, 21, 22
FINISHES: Custom Finished
BOLT PATTERNS: 5x100, 5x108, 5x110, 5x112, 5x114.3, 5x120
APPLICATIONS: Custom widths, bolt patterns, and offsets available
WHEEL TYPE: Three piece



LVS

DIAMETER: 15, 16, 17, 18, 19, 20, 21, 22
FINISHES: Custom Finished
BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x120
APPLICATIONS: Custom widths, bolt patterns, and offsets available
WHEEL TYPE: Three piece



IND-T

DIAMETER: 15, 16, 17, 18, 19, 20, 21, 22
FINISHES: Custom Finished
BOLT PATTERNS: 5x100, 5x108, 5x112, 5x114.3, 5x120
APPLICATIONS: Custom widths, bolt patterns, and offsets available
WHEEL TYPE: Three piece

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R960

DIAMETER: 20, 22
FINISHES: Satin Black, Gloss Black with machined face
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Passenger vehicles
WHEEL TYPE: One piece



R1

DIAMETER: 20, 22
FINISHES: Satin Black with machined face, Satin Black, Chrome
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Passenger vehicles
WHEEL TYPE: One piece



R2

DIAMETER: 20, 22
FINISHES: Satin Gunmetal, Satin Black
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Passenger vehicles
WHEEL TYPE: One piece



R980

DIAMETER: 20, 22
FINISHES: Gloss Black with machined face, Satin Black
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Passenger vehicles
WHEEL TYPE: One piece



R1

DIAMETER: 20, 22
FINISHES: Chrome, Satin Black with machined face, Satin Black
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Passenger vehicles
WHEEL TYPE: One piece



R2

DIAMETER: 20, 22
FINISHES: Satin Black, Satin Gunmetal
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Passenger vehicles
WHEEL TYPE: One piece



R351

DIAMETER: 17, 18
FINISHES: Bright Green, Gloss White, Flat Black with machined face, Hyper Silver with machined face
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Passenger vehicles; compact and stretch
WHEEL TYPE: One piece



R362

DIAMETER: 15
FINISHES: Gold with mach lip, Bright Green with mach lip, Satin Black with mach lip, Hyper Silver with mach lip, Gloss White with mach lip, Candy Red with mach lip, Satin Black with Brze lip, Chrome PVD
BOLT PATTERNS: 4x100, 4x114.3
APPLICATIONS: Passenger vehicles; compact and stretch
WHEEL TYPE: One piece



R358

DIAMETER: 15
FINISHES: Candy Red with mach center and lip, Gold with mach center and lip, Satin Black with mach center and lip, Hyper Silver with mach center and lip, Gloss White with mach center and lip, Satin Black
BOLT PATTERNS: 4x100
APPLICATIONS: Passenger vehicles; compact and stretch
WHEEL TYPE: One piece

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SV62-C

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Orange with Black, Black with Blue, Brushed Red, Black with Yellow, and custom options
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance
WHEEL TYPE: Three piece



SV61-D

DIAMETER: 19, 20, 21, 22, 23, 24, 26, 28, 30, 32
FINISHES: Brushed Double Dark Tint, Matte Black with White, Brushed Gold, Brushed with High Polish, and custom options
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger car, and performance
WHEEL TYPE: Three piece



SV60-D

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Black with Blue, Black with Red, Black with White, Black with Yellow, Brushed Teal, and custom options
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger car, and performance
WHEEL TYPE: Three piece



SV59-C

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Black with Yellow, All Brushed, Black with Green, and custom options
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance
WHEEL TYPE: Three piece



SV58-S

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Black with White, Brushed with High Polish, Brushed Bronze, and custom options
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars and performance, and custom options
WHEEL TYPE: Three piece



SV56-C

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Black with White with Black, Black with Red, Black with Brushed Gold
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle, sport compact, luxury/exotic, on road, passenger cars, and performance
WHEEL TYPE: Three piece



Ancona

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Gold with High Polish, Red with High Polish, Brushed with High Polish, and Custom Options
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle and on road
WHEEL TYPE: Three piece



Veneto

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: All Brushed, Brushed Red, Brushed Gold
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle and on road
WHEEL TYPE: Three piece



Carpi

DIAMETER: 19, 20, 21, 22, 24, 26, 28, 30, 32
FINISHES: Brushed Gold, Blue with High Polish, Brushed with High Polish
BOLT PATTERNS: 3x112, 4x100, 4x108, 4x110, 4x114.3, 4x115, 4x136, 4x136.5, 4x156, 4x98, 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165
APPLICATIONS: Domestic/muscle and on road
WHEEL TYPE: Three piece



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SC001

DIAMETER: 20, 22
FINISHES: Gloss Black machined
BOLT PATTERNS: 5x114.3, 5x120
APPLICATIONS: Cars, staggered fitments
WHEEL TYPE: One piece



SC002

DIAMETER: 20, 22
FINISHES: Gloss Black machined, Silver machined, Flat Gray, Flat Black
BOLT PATTERNS: 5x114.3, 5x115, 5x120
APPLICATIONS: Cars, staggered fitments
WHEEL TYPE: One piece



SC004

DIAMETER: 20, 22
FINISHES: Gloss Black machined
BOLT PATTERNS: 5x114.3, 5x115, 5x120
APPLICATIONS: Cars, staggered fitments
WHEEL TYPE: One piece



SC005

DIAMETER: 20
FINISHES: Gloss Black machined, Flat Gray
BOLT PATTERNS: 5x114.3, 5x115, 5x120
APPLICATIONS: Cars, staggered fitments
WHEEL TYPE: One piece



SC100

DIAMETER: 20
FINISHES: Gloss Black machined
BOLT PATTERNS: 5x112, 5x114.3, 5x120
APPLICATIONS: Cars, staggered fitments
WHEEL TYPE: One piece



SC101

DIAMETER: 20
FINISHES: Gloss Black with machined inner rim
BOLT PATTERNS: 5x112, 5x114.3, 5x120
APPLICATIONS: Cars, staggered fitments
WHEEL TYPE: One piece



SC102

DIAMETER: 20
FINISHES: Gloss Black with machined inner rim
BOLT PATTERNS: 5x112, 5x114.3, 5x120
APPLICATIONS: Cars, staggered fitments
WHEEL TYPE: One piece



Cratus CR007

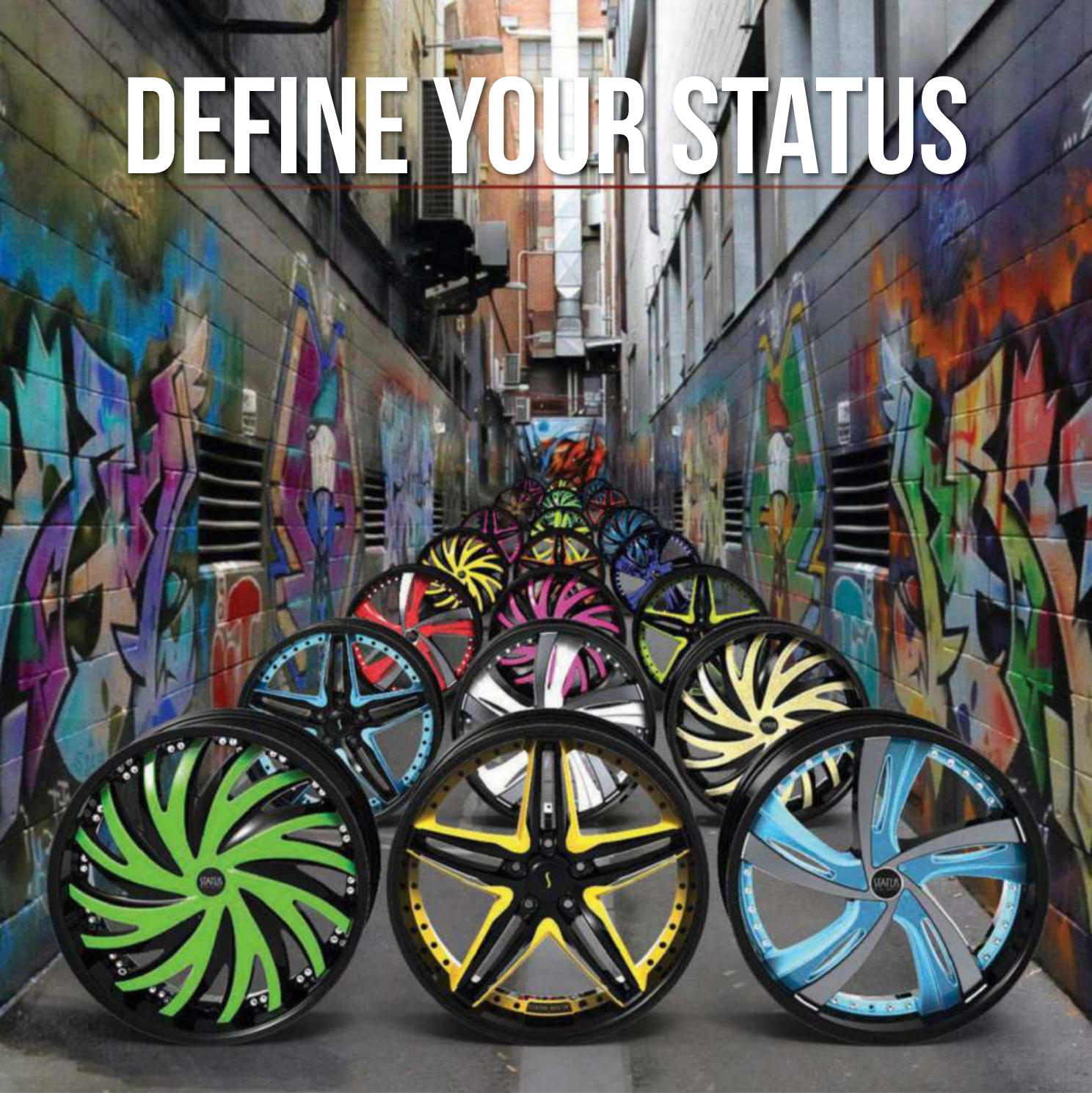
DIAMETER: 22, 24
FINISHES: Gloss Black, Gloss Black machined
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x127, 6x135, 6x139.7
APPLICATIONS: Cars
WHEEL TYPE: One piece



Cratus CR008

DIAMETER: 22, 24
FINISHES: Flat Black, Gloss Black machined, Gloss Black with machined pinstripe
BOLT PATTERNS: 5x114.3, 5x115, 5x120, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x127, 6x135, 6x139.7
APPLICATIONS: Cars
WHEEL TYPE: One piece

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Haze - S837

DIAMETER: 20, 22
FINISHES: Chrome with Gloss Black Inserts, Gloss Black with chrome Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127
APPLICATIONS: Passenger vehicles, mid-size SUV
WHEEL TYPE: One piece



Haze - S837

DIAMETER: 20, 22
FINISHES: Gloss Black with chrome Inserts, chrome with Gloss Black Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127
APPLICATIONS: Passenger vehicles, mid-size SUV
WHEEL TYPE: One piece



Haze - S837

DIAMETER: 20, 22
FINISHES: Custom finish, Gloss Black with chrome Inserts, chrome with Gloss Black Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127
APPLICATIONS: Passenger vehicles, mid-size SUV
WHEEL TYPE: One piece



Fantasy - S835

DIAMETER: 20, 22, 24
FINISHES: Chrome with Gloss Black Inserts, Gloss Black with chrome Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127
APPLICATIONS: Passenger vehicles, mid-size SUV
WHEEL TYPE: One piece



Fantasy - S835

DIAMETER: 20, 22, 24
FINISHES: Gloss Black with chrome Inserts, chrome with Gloss Black Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127
APPLICATIONS: Passenger vehicles, mid-size SUV
WHEEL TYPE: One piece



Fantasy - S835

DIAMETER: 20, 22, 24
FINISHES: Custom finish, Gloss Black with chrome Inserts, chrome with Gloss Black Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127
APPLICATIONS: Passenger vehicles, mid-size SUV
WHEEL TYPE: One piece



Hurricane - S836

DIAMETER: 22, 24, 26
FINISHES: Chrome with Gloss Black Inserts, Gloss Black with chrome Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 6x114.3, 6x115, 6x127, 6x132, 6x135, 6x139.7
APPLICATIONS: Passenger vehicles, mid-size SUV, SUV
WHEEL TYPE: One piece



Hurricane - S836

DIAMETER: 22, 24, 26
FINISHES: Gloss Black with chrome Inserts, chrome with Gloss Black Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 6x114.3, 6x115, 6x127, 6x132, 6x135, 6x139.7
APPLICATIONS: Passenger vehicles, mid-size SUV, SUV
WHEEL TYPE: One piece



Hurricane - S836

DIAMETER: 22, 24, 26
FINISHES: Custom finish, Gloss Black with chrome Inserts, chrome with Gloss Black Inserts
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 6x114.3, 6x115, 6x127, 6x132, 6x135, 6x139.7
APPLICATIONS: Passenger vehicles, mid-size SUV, SUV
WHEEL TYPE: One piece



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O.Z. Racing Atelier Forged Ares

DIAMETER: 20, 21
FINISHES: Matte Dark Graphite, polished, Matte Grey, Black painted, Anodized Black, Brushed Silver
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120, 5x120.7, 5x128, 5x130
WHEEL TYPE: One piece



O.Z. Racing Atelier Forged Zeus

DIAMETER: 20, 21
FINISHES: Black painted, polished, Matte Dark Graphite, Matte Grey, Anodized Black, Brushed Silver
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120, 5x128, 5x130
WHEEL TYPE: One piece



O.Z. Racing Atelier Forged Superforgiata

DIAMETER: 19, 20
FINISHES: Polished with clearcoat, Light Grey painted, Black painted
BOLT PATTERNS: Center Lock, 5x112, 5x114, 5x120, 5x130, 5x14.75
WHEEL TYPE: One piece



Monte TITANO MT4 Cesta

DIAMETER: 17, 18, 19
FINISHES: Machined with Anthracite accent, Matte Titanium
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Avarus AV14

DIAMETER: 18, 20
FINISHES: Machined with Anthracite accent, Titanium Gunmetal
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Axis Model Two

DIAMETER: 19, 20, 21
FINISHES: Machined with Matte Graphite Accent, Matte Graphite Silver
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 5x130
WHEEL TYPE: One piece



Bremmer Kraft BR13

DIAMETER: 17, 18
FINISHES: Machined with Anthracite Accent, Titanium Gunmetal
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120
WHEEL TYPE: One piece



Quad Essen

DIAMETER: 19, 20, 21, 22
FINISHES: Silver machined with Matte Clear, machined with Matte Graphite Accent, Matte Graphite Silver
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120, 5x127, 5x130
WHEEL TYPE: One piece



Starke Design BC for Porsche

DIAMETER: 19
FINISHES: Machined with Matte Graphite Accent, Silver Painted, Matte Graphite Silver
BOLT PATTERNS: 5x130
WHEEL TYPE: One piece

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Maglia
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Danza

DIAMETER: 18, 20, 21
FINISHES: Matte Black or Silver machined undercut
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120, 5x130
APPLICATIONS: Passenger cars, European luxury, and SUVs
WHEEL TYPE: One piece



Torino

DIAMETER: 15, 16, 17, 18
FINISHES: Full Gunmetal or Gunmetal mirror machined
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Passenger cars, import tuners, sport compact, and SUVs
WHEEL TYPE: One piece



MGA

DIAMETER: 15, 16, 17, 18
FINISHES: Matte Black or Silver machined face
BOLT PATTERNS: 4x100, 4x108, 4x114.3, 5x100, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Passenger cars, import tuners, sport compact, and SUVs
WHEEL TYPE: One piece



Maglia

DIAMETER: 17, 18, 20
FINISHES: Gloss Black or Silver machined face
BOLT PATTERNS: 5x112, 5x114.3, 5x120
APPLICATIONS: European luxury, passenger cars, and SUVs
WHEEL TYPE: One piece



Asti

DIAMETER: 17, 18, 19, 20
FINISHES: Graphite machined flange
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120
APPLICATIONS: European luxury, passenger cars, and SUVs
WHEEL TYPE: One piece



Capri

DIAMETER: 17, 18
FINISHES: Gloss Black mirror machined
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x120
APPLICATIONS: European luxury, import tuners, and passenger cars
WHEEL TYPE: One piece



G-FX G20

DIAMETER: 15, 16, 17, 18
FINISHES: Gunmetal machined face
BOLT PATTERNS: 4x100, 4x114.3, 5x100, 5x108, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Import tuner, sport compact, and European cars
WHEEL TYPE: One piece



G-FX TR2

DIAMETER: 16, 17, 18, 20
FINISHES: Matte Black machined flange
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x138.7, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



BG Rod Works Old School

DIAMETER: 15, 17, 18, 20
FINISHES: Chrome or Gunmetal machined lip
BOLT PATTERNS: 5x114.3, 5x120, 6x127
APPLICATIONS: Hot rods and modern muscle cars
WHEEL TYPE: One piece



St.Thomas X250



Sydney X252



Verona X253

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Caracas X233

DIAMETER: 19, 20, 22

FINISHES: Matte Black, Matte Black with brushed face

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece



Verona X253

DIAMETER: 19, 20, 22

FINISHES: Matte Black, Matte Silver with brushed face, Matte Gunmetal

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece



Sydney X252

DIAMETER: 20, 22

FINISHES: Matte Black with brushed face and milled spokes, Gloss Silver with brushed face and milled spokes

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece



Tokyo X201

DIAMETER: 20, 22

FINISHES: Matte Black, Matte Silver with brushed face

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece



Dubai X251

DIAMETER: 20, 22

FINISHES: Gloss Silver with chromed Silver, Matte Black with brushed face

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece



Milan X229

DIAMETER: 19, 20, 22

FINISHES: Matte Black, Matte Silver with brushed face

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece



New York X130

DIAMETER: 20, 22

FINISHES: Matte Silver with brushed face and SS chrome lip, Gloss Black with SS chrome lip

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece



Miami X203

DIAMETER: 20, 22

FINISHES: Matte Black with brushed face, Matte Black

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece



ST Thomas X250

DIAMETER: 20, 22

FINISHES: Gloss Silver with chromed face, Matte Black with brushed face

BOLT PATTERNS: 5x100, 5x105, 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130

APPLICATIONS: High-end luxury sport and exotic vehicles, domestic and foreign

WHEEL TYPE: One piece

ROLLING **B** BIG TIMIN' IT.



IGPOWER:

In the past few years, gas prices may have spiked, but the one thing that's trailed right behind it is the return of lifted trucks. It's kind of ironic when you consider that these fuel-guzzling trucks work against your pocketbook, but then again, it's just a cost to be the boss.

Since the popularity of lifted trucks has returned, it comes as no surprise that other wheel companies are now scrambling to introduce their own lineup of off-road wheels—but it seems as if RBP has the game on lock. Because of its keen foresight and belief in the market, RBP

started this line years back and has since become the go-to brand when it comes to stylish off-road wheels. With a reputation for style and performance, RBP has created a top-flight brand that the scene flocks to.

Signature to RBP wheels are designs that work. With hard edges and clean styles, the wheels offer a rugged yet stylish appeal that's confident but brute. To add to that, this year the company also introduced a line of accessories to accompany its wheels, so be sure to drop by RBP's site and see what's available for your truck. rollingbigpower.com **UWTV**





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Future

DIAMETER: 20, 22, 24, 26, 28
FINISHES: Black and machined with Dark Tint and chrome
BOLT PATTERNS: 5x120, 5x127, 5x139.7, 5x150, 6x135, 6x139.7
WHEEL TYPE: One piece



Shot Calla

DIAMETER: 22
FINISHES: Gloss Black and brushed, Black and machined with Dark Tint and chrome
BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 6x135, 6x139.7
APPLICATIONS: Gloss Black and Brushed available 22x9 & 22x10.5 for front-wheel-drive applications only
WHEEL TYPE: One piece



Sleeper

DIAMETER: 24
FINISHES: Chrome, Black and machined with Dark Tint
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7
WHEEL TYPE: One piece



Skillz

DIAMETER: 22, 24, 26
FINISHES: Black and machined with Dark Tint, chrome
BOLT PATTERNS: 5x115, 5x120, 5x127, 5x139.7, 6x135, 6x139.7
WHEEL TYPE: One piece



Chedda

DIAMETER: 22, 24
FINISHES: Black and machined with Dark Tint
BOLT PATTERNS: 5x115, 5x139.7, 6x135, 6x139.7
WHEEL TYPE: One piece



Swerv

DIAMETER: 22, 24, 26
FINISHES: Black and machined with Dark Tint, chrome
BOLT PATTERNS: 5x115, 5x139.7, 6x135, 6x139.7
WHEEL TYPE: One piece



8-Ball

DIAMETER: 22, 24, 26
FINISHES: Black and milled, chrome
BOLT PATTERNS: 5x120, 5x127, 5x139.7, 6x135, 6x139.7
WHEEL TYPE: One piece



Attack-6

DIAMETER: 22, 24, 26
FINISHES: Black and machined with Dark Tint, chrome
BOLT PATTERNS: 6x135, 6x139.7
WHEEL TYPE: One piece



Baller

DIAMETER: 20, 22, 24, 26, 28, 30
FINISHES: Black and machined with Dark Tint, chrome
BOLT PATTERNS: 5x115, 5x120, 5x120.7, 5x127, 5x139.7, 5x150, 6x135, 6x139.7
WHEEL TYPE: One piece

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17, 18, 20

6 Spoke
PREDATOR II 249
17, 18, 20

8 Spoke
PREDATOR II 249
17, 18, 20

CUV
DECOY 251
17, 18

BULLY 264
17, 18, 20

SOLDIER 188
17, 18, 20

5-6 lug
covered cap shown
TROOPER 189
17, 18, 20

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176 Vagabond

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Satin Black, Gloss Black with diamond-cut lip
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



188 Soldier

DIAMETER: 17, 18, 20
FINISHES: Satin Black with milling
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



189 Trooper

DIAMETER: 17, 18, 20
FINISHES: Satin Black with milling
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



225 Phantom

DIAMETER: 16, 17, 18, 20
FINISHES: Satin Black with diamond-cut accents, Chrome, Satin Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



249 Predator II (8 Spoke)

DIAMETER: 17, 18, 20
FINISHES: Chrome (20x12), Gloss Black with milling, Ultra V finish PVD
BOLT PATTERNS: 5x150, 8x165.1, 8x170, 8x180
APPLICATIONS: Trucks, SUVs
WHEEL TYPE: One piece



249 Predator II (6 Spoke)

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with milling, Chrome (20x12), Ultra V finish PVD
BOLT PATTERNS: 5x127, 5x139.7, 6x120, 6x135, 6x139.7
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



250 Colossus

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with diamond-cut accents
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



251 Decoy

DIAMETER: 17, 18
FINISHES: Gloss Black with spot-mill dimples
BOLT PATTERNS: 5x110, 5x114.3, 5x120, 5x127
APPLICATIONS: CUVs, FWD passenger cars
WHEEL TYPE: One piece



264 Bully

DIAMETER: 17, 18, 20
FINISHES: Satin Black
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece

WORX
SERIOUS
TRUCK
WHEELS

20x12

808 BEAST II

Gloss Black w/ Milled Accents
Satin Black

808 BEAST II 8 LUG

808 BEAST II 5/6 LUG

807 LEDGE 8 LUG

807 LEDGE 5/6 LUG



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808 Beast II

DIAMETER: 18, 20
FINISHES: Gloss Black with milling, Satin Black with spot mill dimples
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



807 Ledge

DIAMETER: 20
FINISHES: Satin Black with milling
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



807 Triton

DIAMETER: 17, 18, 20
FINISHES: Ultra V finish PVD, Satin Black, Gloss Black with milling
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



805 Tyrant

DIAMETER: 18, 20, 22
FINISHES: Satin Black with diamond-cut accents, PVD
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



804 Tank

DIAMETER: 16, 17, 18, 20
FINISHES: Satin Black with undercut and large spot mill dimples
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



803 Beast Dually

DIAMETER: 17
FINISHES: Gloss Black with milling, Satin Black, Chrome
BOLT PATTERNS: 8x165.1, 8x200, 8x210
APPLICATIONS: Dually trucks
WHEEL TYPE: One piece



803 Beast

DIAMETER: 16, 17, 18, 20
FINISHES: Ultra V finish PVD, Gloss Black with milling, Satin Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



802 Havoc

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with milling, Satin Black with spot milled dimples
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece



801 Triad

DIAMETER: 16, 17, 18, 20
FINISHES: Satin Black with spot mill dimples, Ultra V finish PVD
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, Jeeps, SUVs
WHEEL TYPE: One piece

Detroit Ste

Tnce you read the title and see the rides that grace this page, there's really not much more to say. From the menacing looks of these vehicles, you can only tell that American Vintage Steel is this wheel maker's passion, which is why it should come as no surprise that the company behind it all is called Mob Steel. The one-time hobby turned automotive lifestyle—and now business—was all executed by Adam Genoi; and now he and his team of artisans have become front-runners when it comes to designing and crafting the worlds' most menacing and tricked-out vehicles. We met this team of artisans years ago and since then, they've continually pumped out some of the most awe-inspiring project builds we've seen in that time.

It comes as no surprise that they are the gents behind a relatively new segment to their business that has taken the domestic market by storm. That company? Detroit Steel Wheels. Their product? Steelies.

This new segment of the company's business concentrates solely on steel wheels, better known as "Steelies," but they've added their own touch and created them in different bolt patterns as well as widths. The wheels can be purchased with a host of accessories, including spider caps and chrome trim rings. One thing is for sure—these designs certainly bridge the gap between modern craftsmanship and vintage styling, and the timeless essence of the look it provides isn't going out of style anytime soon...if ever. Visit them online at detroitsteelwheel.com. **UWTC**



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Independence Super Dually Series

DIAMETER: 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Applications (Dual Rear Wheels)
WHEEL TYPE: One piece



EVO SD Series

DIAMETER: 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Wheels (Dually)
WHEEL TYPE: One piece



Twister Super Dually Series

DIAMETER: 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Wheels (Dually)
WHEEL TYPE: One piece



Scope DRW

DIAMETER: 20, 22, 24, 26
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Wheel Application (Dually)
WHEEL TYPE: One piece



Mayday DRW

DIAMETER: 20, 22, 24, 26
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Wheels Applications (Dually)
WHEEL TYPE: One piece



Ammo DRW

DIAMETER: 20, 22, 24, 26
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Wheels Applications (Dually)
WHEEL TYPE: One piece



Octane DRW

DIAMETER: 20, 22, 24, 26
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Wheels Applications (Dually)
WHEEL TYPE: One piece



Independence DRW

DIAMETER: 20, 22, 22.5, 24, 26
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Wheels Applications (Dually)
WHEEL TYPE: One piece



Evo DRW

DIAMETER: 20, 22, 22.5, 24, 26
FINISHES: Polished aluminum; however custom powdercoated finishes are available
BOLT PATTERNS: 8x165, 8x170, 8x180, 8x200, 8x270
APPLICATIONS: All Dual Rear Wheels Applications (Dually)
WHEEL TYPE: One piece

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Brawler Multi-Piece Series

DIAMETER: 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes available for each component.
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: Two piece



Cluster Multi-Piece Series

DIAMETER: 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes available for each component. *22x16 & 24x16 also available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: Two piece



Honor Multi-Piece Series

DIAMETER: 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes available for each component. *22x16 & 24x16 also available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: Two piece



Recoil Special Force Series

DIAMETER: 20, 22, 24
FINISHES: Special Force Series come standard powdercoated flat black with machined windows and polished lip. Many powdercoated color options are also available instead of standard flat black.
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Ten Four Special Force Series

DIAMETER: 20, 22, 24
FINISHES: Special Force Series come standard powdercoated flat black with machined windows and polished lip. Many powdercoated color options are also available instead of standard flat black.
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Storm Special Force Series

DIAMETER: 20, 22, 24
FINISHES: Special Force Series come standard powdercoated flat black with machined windows and polished lip. Many powdercoated color options are also available.
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and Pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Zodiac Super Single Series

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes are available.
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Independence Super Single

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes are available.
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Buckshot Super Single

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes are available.
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece

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Steam 3D Series

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finished available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



GEM 3D Series Wheels

DIAMETER: 20, 22, 24
FINISHES: polished aluminum; however custom powdercoated finished available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Merit 3D Series

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finished available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Knight Faceplate Series

DIAMETER: 20, 22, 24
FINISHES: polished aluminum; however custom powdercoated finished available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Thor Faceplate Series

DIAMETER: 20, 22, 24
FINISHES: polished aluminum; however custom powdercoated finished available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Snafu Faceplate Series

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finishes available for each component
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Evade Faceplate

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finished available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Vector Faceplate Series

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finished available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and Pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



Fallout Faceplate Series

DIAMETER: 20, 22, 24
FINISHES: Polished aluminum; however custom powdercoated finished available
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180, 8x200, 8x210
APPLICATIONS: Fits Jeeps, SUVs, and pickup trucks (5 lug, 6 lug, 8 lug)
WHEEL TYPE: One piece



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Armor

DIAMETER: 17, 18, 20
FINISHES: Black machined face or liquid chrome
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Bandit

DIAMETER: 17, 20
FINISHES: Matte Black
BOLT PATTERNS: 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Buckshot

DIAMETER: 17, 18, 20
FINISHES: Black machined face, Matte Black and chrome
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Bullet

DIAMETER: 17, 18, 20
FINISHES: Black machined face
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Curse

DIAMETER: 17, 20
FINISHES: Black machined face
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Deputy

DIAMETER: 17, 18, 20
FINISHES: Matte Black and Black machined face
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Grit

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with Ball Machine
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Hollywood

DIAMETER: 17, 18, 20, 22
FINISHES: Matte Black
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Regulator

DIAMETER: 17, 18, 20
FINISHES: Matte Black with Ball Machine and Silver with Ball Machine
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



BALLISTIC OFF-ROAD



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Ravage 958

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with milled windows
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7
APPLICATIONS: 5- and 6-lug filaments for stock, lifted, and leveled trucks and SUVs
WHEEL TYPE: One piece



Mace 957

DIAMETER: 17, 20
FINISHES: Gloss Black with milled windows
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7
APPLICATIONS: 5- and 6-lug filaments for stock, lifted, and leveled trucks and SUVs
WHEEL TYPE: One piece



Dagger 951

DIAMETER: 20
FINISHES: Gloss Black with milled windows
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7
APPLICATIONS: 5- and 6-lug filaments for stock, lifted, and leveled truck and SUVs
WHEEL TYPE: One piece



Scythe 953

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with milled windows
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: 5-, 6-, 8-lug filaments for stock, lifted, and leveled trucks and SUVs
WHEEL TYPE: One piece



Anvil 955

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with milled windows
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: 5-, 6-, 8-lug filaments for stock, lifted, and leveled trucks and SUVs
WHEEL TYPE: One piece



Razorback 956

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with milled windows
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: 5-, 6-, 8-lug filaments for stock, lifted, and leveled trucks and SUVs
WHEEL TYPE: One piece



Morax 845

DIAMETER: 17, 18, 20
FINISHES: Flat Black
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: 5-, 6-, 8-lug filaments for stock, lifted, and leveled trucks and SUVs
WHEEL TYPE: One piece



Jester 814

DIAMETER: 16, 17, 18, 20, 22
FINISHES: Flat Black with optional red inserts
BOLT PATTERNS: 5x114.3, 5x120.7, 5x127, 5x135, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Removable red inserts
WHEEL TYPE: One piece



Havoc 904

DIAMETER: 17, 18, 20
FINISHES: Flat Black
BOLT PATTERNS: 5x114.3, 5x120, 5x127, 5x135, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: 5-, 6-, 8-lug filaments for stock, lifted, and leveled trucks and SUVs
WHEEL TYPE: One piece

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Brawl

DIAMETER: 20
FINISHES: Death Metal Black
BOLT PATTERNS: 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



B.A.T.L.

DIAMETER: 20
FINISHES: Death Metal Black, Stealth Black
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



F.I.T.E. 6

DIAMETER: 20
FINISHES: Death Metal Black, Stealth Black
BOLT PATTERNS: 6x135, 6x139.7
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



Rehab 8

DIAMETER: 20, 22
FINISHES: Death Metal Black, Stealth Black
BOLT PATTERNS: 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



R.E.P.R. 6

DIAMETER: 20
FINISHES: Death Metal Black, Stealth Black
BOLT PATTERNS: 6x135, 6x139.7
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



Pro Series SSD-No Ring

DIAMETER: 17
FINISHES: Stealth Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



Pro Series DRT-With Optional Bolt-On Ring

DIAMETER: 17
FINISHES: Stealth Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



Novakane 8

DIAMETER: 18, 20, 22
FINISHES: Death Metal Black, Stealth Black
BOLT PATTERNS: 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



S.O.T.A.

DIAMETER: 20, 22, 24
FINISHES: Death Metal Black, Stealth Black
BOLT PATTERNS: 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted and leveled trucks
WHEEL TYPE: One piece



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LT1

DIAMETER: 20
FINISHES: Chrome, Gloss Black, Machined Black, optional bead-lock ring
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted truck
WHEEL TYPE: One piece



LT2

DIAMETER: 20
FINISHES: Machined black, PVD
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Lifted truck
WHEEL TYPE: One piece



RT1

DIAMETER: 20
FINISHES: Satin Graphite with brushed center, Gloss Black with brushed center, Gloss Black with Gloss Graphite, Satin Black, PVD, PVD with brushed center, optional bead-lock ring
BOLT PATTERNS: 5x114.3, 5x115, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Racing truck
WHEEL TYPE: One piece



RT2

DIAMETER: 17, 20
FINISHES: Satin Black with Satin Graphite, Satin Black with machined ring and center, Satin Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Racing truck
WHEEL TYPE: One piece



ST1

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with milled accents, Gloss Black with machined face, Satin Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Street truck
WHEEL TYPE: One piece



ST2

DIAMETER: 20
FINISHES: Satin Black machined center, PVD
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Street truck
WHEEL TYPE: One piece



MM1

DIAMETER: 20
FINISHES: Gloss Black with machined face, Gloss Silver with machined face, PVD
BOLT PATTERNS: 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Modern Muscle
WHEEL TYPE: One piece



MM2

DIAMETER: 20
FINISHES: PVD, Gloss Black with machined face, Gloss Silver with machined face
BOLT PATTERNS: 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Modern Muscle
WHEEL TYPE: One piece



MM3

DIAMETER: 20
FINISHES: Gloss Silver with machined face, Gloss Black with machined face, PVD
BOLT PATTERNS: 5x114.3, 5x115, 5x120, 5x127
APPLICATIONS: Modern Muscle
WHEEL TYPE: One piece



DROPSTARS WHEELS



DROPSTARS

DROPSTARS OFFROAD



647BM

DIAMETER: 17, 18, 20, 22

FINISHES: Satin Black with CNC-milled accents and chrome D-Star cap

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7

APPLICATIONS: Off-Road

WHEEL TYPE: One piece



645V

DIAMETER: 17, 18, 20

FINISHES: Bright PVD - durable all-weather synthetic chrome. Note: Size

20x10 is chrome plated

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1,

8x170

APPLICATIONS: Off-Road

WHEEL TYPE: One piece



645MB

DIAMETER: 17, 18, 20

FINISHES: Gloss Black with mirror-machined face and chrome D-Star cap

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1,

8x170

APPLICATIONS: Off-Road

WHEEL TYPE: One piece



645B

DIAMETER: 17, 18, 20

FINISHES: Satin Black with CNC-milled lip accents and chrome D-Star cap

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1,

8x170

APPLICATIONS: Off-Road

WHEEL TYPE: One piece



646MB

DIAMETER: 18, 20

FINISHES: Gloss Black with mirror-machined face and chrome D-Star cap

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1,

8x170

APPLICATIONS: Off-Road

WHEEL TYPE: One piece



643MB

DIAMETER: 18, 20, 22

FINISHES: Mirror-machined face and lip edge with Gloss Black accents

BOLT PATTERNS: 5x108, 5x112, 5x114.3, 5x115, 5x120

APPLICATIONS: Luxury passenger cars and SUVs

WHEEL TYPE: One piece



644B-5

DIAMETER: 18, 20, 22

FINISHES: Satin Black with mirror-machined lip edge

BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 5x120.7, 5x127, 6x135, 6x139.7

APPLICATIONS: Luxury passenger cars and SUVs

WHEEL TYPE: One piece



644MB-5

DIAMETER: 18, 20, 22

FINISHES: Mirror-machined face and lip edge with Gloss Black accents

BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120

APPLICATIONS: Luxury passenger cars and SUVs

WHEEL TYPE: One piece



644MB-6

DIAMETER: 24

FINISHES: Mirror-machined face and lip edge with Gloss Black accents

BOLT PATTERNS: 6x135, 6x139.7

APPLICATIONS: Luxury SUVs

WHEEL TYPE: One piece



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Tuff

DIAMETER: 15, 16, 17
FINISHES: Flat Black
BOLT PATTERNS: 5x14.3, 5x127, 5x139.7, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



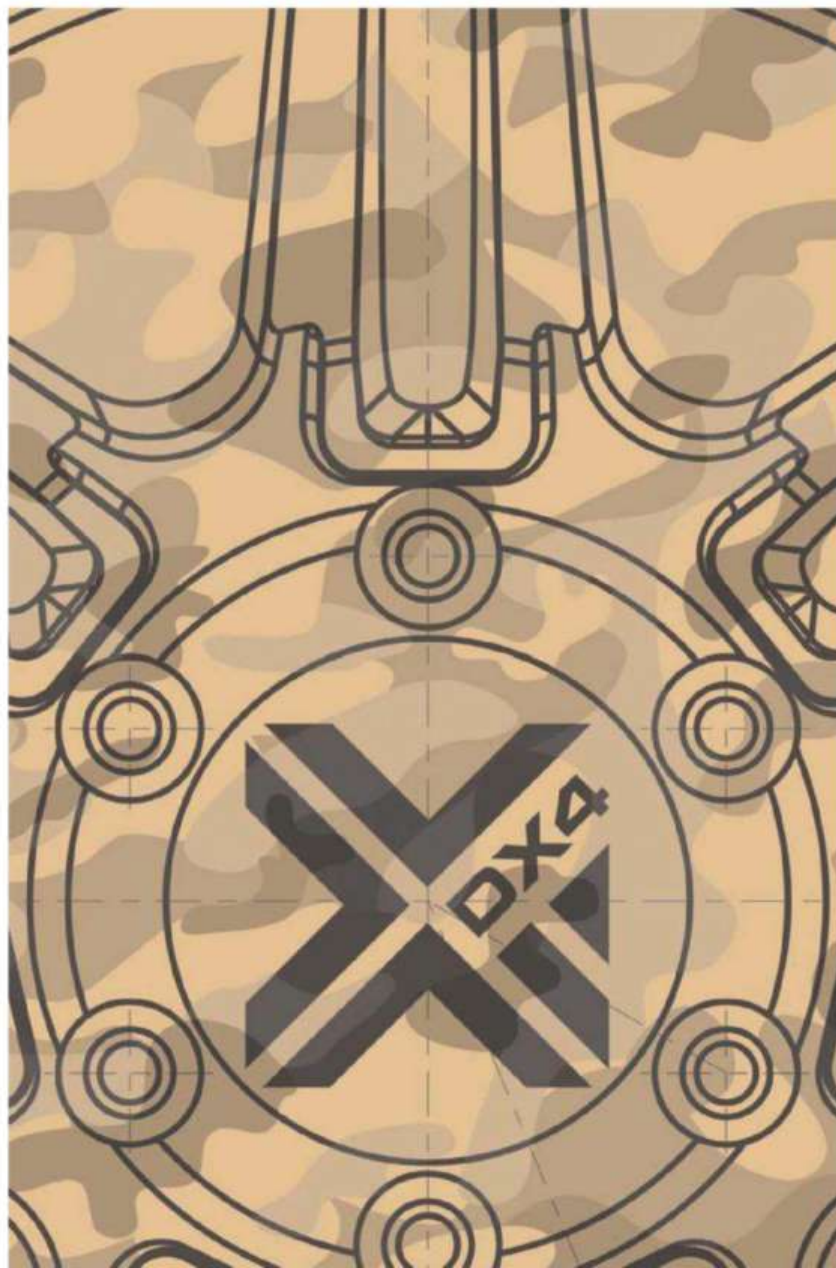
Tuff

DIAMETER: 15, 16, 17
FINISHES: Flat Black machined
BOLT PATTERNS: 5x14.3, 5x127, 5x139.7, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



7S

DIAMETER: 15, 16, 17
FINISHES: Flat Black
BOLT PATTERNS: 5x14.3, 5x127, 5x139.7, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



7S

DIAMETER: 15, 16, 17
FINISHES: Flat Black machined
BOLT PATTERNS: 5x14.3, 5x127, 5x139.7, 6x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



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739B Endurance

DIAMETER: 17, 20
FINISHES: Satin Black center with anthracite gray lip and aluminum lip bolts
BOLT PATTERNS: 5x114.3, 5x127, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



737BM Challenger

DIAMETER: 18, 20
FINISHES: Gloss Black with CNC-milled accents
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



737V Challenger

DIAMETER: 18, 20
FINISHES: Bright PVD-durable all-weather synthetic chrome
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



726M Big Block

DIAMETER: 18, 20, 22
FINISHES: Gloss Black with mirror-machined face and spot-milled lip accents
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



726C Big Block

DIAMETER: 18, 20, 22
FINISHES: Chrome plated
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



726MB Big Block

DIAMETER: 18, 20, 22
FINISHES: Satin Black with milled accents
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



738MB Switchback

DIAMETER: 17, 18, 20
FINISHES: Satin Black with mirror-machined spoke accents and gold-tone cadmium bolts
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



738V Switchback

DIAMETER: 17, 18, 20
FINISHES: Bright PVD with gold-tone cadmium-plated bolts-all-weather synthetic chrome
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



719C Backcountry

DIAMETER: 18, 20
FINISHES: Chrome plated
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece

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Beast

DIAMETER: 17, 18, 20, 22
FINISHES: Black and machined with Dark Tint
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x104.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



Summit

DIAMETER: 20
FINISHES: Matte Black
BOLT PATTERNS: 5x127, 5x139.7, 6x135, 6x139.7
WHEEL TYPE: One piece



Assault

DIAMETER: 17, 18, 20, 22
FINISHES: Black and milled
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



Vapor

DIAMETER: 17, 18, 20
FINISHES: Matte Black, Matte Black and Machined with Dark Tint
BOLT PATTERNS: 5x114.3, 5x120, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



Hostage III

DIAMETER: 17, 18, 20
FINISHES: Matte Anthracite and Matte Black
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



Savage

DIAMETER: 17, 18, 20
FINISHES: Gloss Black and milled, Matte Black and milled with machined lip
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



Rotor

DIAMETER: 17, 20
FINISHES: Matte Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7
WHEEL TYPE: One piece



JM2

DIAMETER: 17, 20
FINISHES: Matte Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7
WHEEL TYPE: One piece



Maverick

DIAMETER: 20
FINISHES: Anthracite and milled
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece

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Bully Pro

DIAMETER: 15, 16, 17
FINISHES: Pro Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x114.3, 6x139.7, 8x165.1, 8x170
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Tracker Pro

DIAMETER: 15, 16, 17
FINISHES: Pro Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x114.3, 6x139.7, 8x165.1, 8x170
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Punch

DIAMETER: 15, 16, 17, 18
FINISHES: Anthracite machined
BOLT PATTERNS: 5x114.3, 5x120.65, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Strike 5

DIAMETER: 16, 17, 18, 20
FINISHES: Matte Black machined, Silver machined and Matte Black
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Scorpion

DIAMETER: 16, 17, 18, 20
FINISHES: Anthracite machined and Matte Black machined
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



MK6

DIAMETER: 16, 17, 18
FINISHES: Matte Black, Matte Bronze, and Matte Gunmetal
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Strike 8

DIAMETER: 16, 17, 18, 20
FINISHES: Matte Black, Matte Black machined, and Silver machined
BOLT PATTERNS: 8x165.1, 8x170
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Guardian

DIAMETER: 16, 17, 18, 20
FINISHES: Matte Black, Bronze, and chrome
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Tracker

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Matte Black and polished
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



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TYPE M14

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TYPE M16

MATTE BLACK W/ BOLTS

17X9 | 18X9 | 20X9

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TYPE M17

GLOSS BLACK W/
MACHINED ACCENTS
& DRILL HOLES

16X8 | 17X9 | 18X9 | 20X9

NEW!



TYPE M18

MATTE BLACK OR
MATTE GRAPHITE W/
MACHINE BEAD LIP & BOLTS

15X8 | 17X9 | 18X9 | 20X9

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Type M18

DIAMETER: 15, 17, 18, 20

FINISHES: Matte Black with machine bead lip and bolts (shown); Matte Graphite with machine bead lip and bolts

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7

APPLICATIONS: Applications for 5-lug/6-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece



Type M17

DIAMETER: 16, 17, 18, 20

FINISHES: Gloss Black with machined accents and drill holes

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x114.3, 6x135, 6x139.7

APPLICATIONS: Applications for 5-lug/6-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece



Type M16

DIAMETER: 17, 18, 20

FINISHES: Matte Black with bolts

BOLT PATTERNS: 5x127, 5x139.7, 6x135, 6x139.7

APPLICATIONS: Applications for 5-lug/6-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece



Type M15

DIAMETER: 17, 18, 20

FINISHES: Bright Satin (shown) with drill holes; Gloss Black with drill holes

BOLT PATTERNS: 5x127, 5x139.7, 6x135, 6x139.7

APPLICATIONS: Applications for 5-lug/6-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece



Type M14

DIAMETER: 17, 18, 20

FINISHES: Machined face Silver (shown); Matte Black

BOLT PATTERNS: 5x127, 5x139.7, 6x135, 6x139.7

APPLICATIONS: Applications for 5-lug/6-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece



Type M13

DIAMETER: 15, 16, 17, 18, 20

FINISHES: Matte Black

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x114.3, 6x135, 6x139.7

APPLICATIONS: Applications for 5-lug/6-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece



Type M12

DIAMETER: 16, 17, 18, 20

FINISHES: Matte Black with machine bead lip

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x150, 6x135, 6x139.7, 8x165.1, 8x170

APPLICATIONS: Applications for 5-lug/6-lug/8-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece



Type M1X

DIAMETER: 17, 18, 20

FINISHES: Matte Black machined face

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x150, 6x135, 6x139.7

APPLICATIONS: Applications for 5-lug/6-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece



Type M2X

DIAMETER: 17, 18, 20

FINISHES: Gloss Black machined

BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x150, 6x135, 6x139.7

APPLICATIONS: Applications for 5-lug/6-lug street and lifted, on- and off-road trucks, Jeeps, and SUVs

WHEEL TYPE: One piece

MB
WHEELS



11



VORTEX



TKO



352



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352

DIAMETER: 16, 17, 18, 20
FINISHES: Matte Black
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



352

DIAMETER: 16, 17, 18, 20
FINISHES: Matte Black machined
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



11

DIAMETER: 15, 16, 17
FINISHES: Matte Black
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x139.7, 8x165.1, 8x170
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



11

DIAMETER: 15, 16, 17
FINISHES: Matte Black machined
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Vortex

DIAMETER: 16, 17, 18, 20
FINISHES: Matte Black
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Vortex

DIAMETER: 16, 17, 18, 20
FINISHES: Black machined
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



Razor

DIAMETER: 15, 16, 17, 20
FINISHES: Black machined
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x135, 6x139.7, 8x165.1
APPLICATIONS: Enter all applications
WHEEL TYPE: One piece



TKO

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Matte Black
BOLT PATTERNS: 5x114.3, 5x120.65, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x127, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



TKO

DIAMETER: 16, 17, 18, 20
FINISHES: Chrome
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x127, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: On- and off-road trucks and SUVs
WHEEL TYPE: One piece



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648B

DIAMETER: 20, 22
FINISHES: Satin Black with Green Monster M-Claw logo and matching Monster Green lip-edge bolts
BOLT PATTERNS: 5x127, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



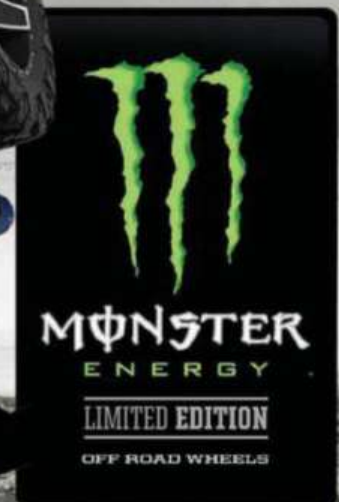
648MB

DIAMETER: 20, 22
FINISHES: Gloss Black with mirror-machined accents, Green Monster M-Claw logo and chrome lip-edge bolts
BOLT PATTERNS: 5x127, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



539BM

DIAMETER: 20, 22
FINISHES: Gloss Black with CNC-milled accents, Green Monster M-Claw logo and black lip-edge accents
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



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M88

18 BLACK MILLED
20 BLACK



M70

17 BLACK MACHINED
18 CHROME
20 BLACK



M08

17 GLOSS BLACK MILLED
18 BLACK MACHINED
20 FLAT BLACK
22 CHROME



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M88

DIAMETER: 18, 20, 22
FINISHES: Black milled, Black, Black machined face
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x127, 6x135, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



M06

DIAMETER: 18, 20
FINISHES: Black machined, Chrome, Black
BOLT PATTERNS: 5x135, 5x139.7, 6x127, 6x135, 6x139.7
WHEEL TYPE: One piece



M10

DIAMETER: 17, 18, 20
FINISHES: Black, Black machined, chrome, milled
BOLT PATTERNS: 5x114.3, 5x135, 6x127, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



M03

DIAMETER: 17, 20, 22, 24, 26, 28, 30
FINISHES: Black machined, chrome, Black
BOLT PATTERNS: 5x135, 5x139.7, 6x120, 6x135, 6x139.7, 8x165.1, 8x170
WHEEL TYPE: One piece



M08

DIAMETER: 17, 18, 20, 22
FINISHES: Gloss Black milled, Flat Black, Black machined, chrome
BOLT PATTERNS: 5x114.3, 5x135, 5x139.7, 6x127, 6x135, 6x139.7, 8x165.1, 8x170
WHEEL TYPE: One piece



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18X9, 20X9

VOLTAGE
17X9, 18X9, 20X9, 20X10

UZI 20X9
ALSO AVAIL. IN ALL CHROME

ASSAULT 20X10
ALSO AVAIL. IN ALL CHROME

COLT 20X9, 20X10, 22X12
ALSO AVAIL. IN ALL CHROME

BLADE 24X12
ALSO AVAIL. IN ALL CHROME



SCALPEL MONO BLOCK
20X10, 20X12, 22X12, 24X12/CUSTOM

96-R
20X9 COVERED CAP, 22X9.5 EXPOSED

98-R
20X9

FURY
20X9, 20X10

ASSASSIN
18X9, 20X9, 20X10, 20X12, 22X12

94-R (C-ROME AVAIL.)
17X9, 18X9, 20X9, 20X10, 22X10



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RX-3 STEP

TEXTURED BLACK FINISH

STAINLESS STEEL FINISH



RX-2 GAS EXHAUST TIP

DIESEL / GAS TIPS



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RX-3 LED LIGHT GRILLE, CUSTOM



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New Blade (custom two-tone finish shown)

DIAMETER: 24
FINISHES: All chrome, Gloss Black with machined accents, custom finish
BOLT PATTERNS: 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



New Colt (custom two-tone finish shown)

DIAMETER: 20, 22
FINISHES: All chrome, Gloss Black with machined accents, custom finish
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



New UZI (custom finish shown)

DIAMETER: 20
FINISHES: All chrome, Gloss Black with machined accents, all Gloss Black, custom finish
BOLT PATTERNS: 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



New Assault (custom finish shown)

DIAMETER: 20
FINISHES: All chrome, Gloss Black with machined accents, all Gloss Black, custom finish
BOLT PATTERNS: 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



Tactical (optional bead ring shown)

DIAMETER: 18, 20
FINISHES: Gloss Black with machined accents, custom finish
BOLT PATTERNS: 5x108, 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



Voltage (optional bead ring shown)

DIAMETER: 17, 18, 20
FINISHES: Gloss Black with machined accents, custom finish
BOLT PATTERNS: 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



New Savage Forged 1-piece Monoblock (custom finish shown)

DIAMETER: 20, 22, 24
FINISHES: All chrome, Gloss Black with machined accents, all Gloss Black, custom finish
BOLT PATTERNS: 5x110, 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



New Beretta Forged 1-piece Monoblock (custom finish shown)

DIAMETER: 20, 22, 24
FINISHES: All chrome, Gloss Black with machined accents, all Gloss Black, custom finish
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



New Revolver-6 Forged 1-piece Monoblock (custom finish shown)

DIAMETER: 20, 22, 24
FINISHES: All chrome, Gloss Black with machined accents, all Gloss Black, custom finish
BOLT PATTERNS: 5x112, 5x114.3, 5x115, 5x120, 5x120.65, 5x120.7, 5x127, 5x130, 5x135, 5x139.7, 5x150, 5x205, 6x114.3, 6x115, 6x120, 6x127, 6x132, 6x135, 6x139.7, 6x165.1, 8x170, 8x180
APPLICATIONS: Trucks and SUVs
WHEEL TYPE: One piece



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2015 Chevrolet Silverado 1500 with
20" Ultra Colossus machined with black accent





Dick Cepek Blackout

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Black painted
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
WHEEL TYPE: One piece



Granite Alloy® GA640

DIAMETER: 16, 17, 18, 20
FINISHES: Anthracite painted, Black painted
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x150, 6x135, 6x139.7
WHEEL TYPE: One piece



Granite Alloy® GV7

DIAMETER: 17, 18, 20
FINISHES: Black with milled accent
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



KMC XD Series XD820 Grenade

DIAMETER: 16, 17, 18, 20, 22
FINISHES: Black with milled accent, machined with Black accent, Black painted
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
WHEEL TYPE: One piece



MAMBA M18

DIAMETER: 15, 17, 18, 20
FINISHES: Matte Graphite Silver with machined lip, Black with machined lip
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7
WHEEL TYPE: One piece



Method Roost

DIAMETER: 17, 18, 20
FINISHES: Black painted, Bronze painted
BOLT PATTERNS: 5x127, 5x139.7, 5x150, 6x135, 6x139.7
WHEEL TYPE: One piece



Monte TITANO MT216 Rocca-6

DIAMETER: 17, 18
FINISHES: Black with machined lip, Matte Titanium
BOLT PATTERNS: 6x132, 6x135, 6x139.7
WHEEL TYPE: One piece



Ultra Motorsports Xtreme X106 Sawblade

DIAMETER: 17
FINISHES: Anthracite with Black lip, Black painted
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
WHEEL TYPE: One piece



Walker Evans Racing 501 Legend

DIAMETER: 15, 16, 17
FINISHES: Machined with Black accent, Black painted
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
WHEEL TYPE: One piece



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538MB

DIAMETER: 17, 18, 20
FINISHES: Gloss black with mirror-machined face and chrome T-Star cap
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



535V

DIAMETER: 17, 18, 20, 22
FINISHES: Bright PVD with T-Star cap-durable all-weather synthetic chrome. Note: Sizes 20x12 and 22x12 are chrome plated
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



535MB

DIAMETER: 17, 18, 20, 22
FINISHES: Gloss Black with mirror-machined face and chrome T-Star cap
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



535B

DIAMETER: 17, 18, 20, 22
FINISHES: Satin Black with CNC-milled lip accents
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170, 8x180
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



534B

DIAMETER: 18, 20, 22
FINISHES: Satin Black with chrome bolt accents and chrome T-Star cap
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Off-Road
WHEEL TYPE: One piece



536MB

DIAMETER: 18, 20, 22
FINISHES: Mirror-machined face and lip edge with gloss-black accents
BOLT PATTERNS: 5x100, 5x110, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece



537MB

DIAMETER: 18, 20, 22
FINISHES: Mirror-machined face and lip edge with gloss-black accents
BOLT PATTERNS: 5x100, 5x112, 5x114.3, 5x115, 5x120
APPLICATIONS: Luxury cars and SUVs
WHEEL TYPE: One piece

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T14

DIAMETER: 20
FINISHES: Satin Black with milled spokes, Satin Black
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece



T12

DIAMETER: 20
FINISHES: Satin Black with milled spokes and brushed inserts, Satin Black with Red Inserts, Satin Black with brushed inserts
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece



T10

DIAMETER: 15, 16, 17, 18, 20, 22
FINISHES: Gloss Black with milled spokes, Flat Black with Red accents
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x114.3, 6x120, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece



T07

DIAMETER: 17, 20, 22
FINISHES: Satin Black
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x135, 6x139.7
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece



T05

DIAMETER: 16, 17, 20, 24
FINISHES: Flat Black, Flat Black with machined face, chrome
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece



T11

DIAMETER: 18, 20
FINISHES: Satin Black with milled spokes, Satin Black with machined face
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x135, 6x139.7
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece



T06

DIAMETER: 16, 17, 20, 22
FINISHES: Satin Black with machined face, Satin Black, chrome
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece



T13

DIAMETER: 16, 17, 20, 22, 24, 26
FINISHES: Gloss Black with machined face and flange, chrome, Gloss Black-26-inch only
BOLT PATTERNS: 5x127, 5x135, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece



T01

DIAMETER: 15, 16, 17, 18, 20, 22
FINISHES: Flat Black with red or chrome inserts, Flat Black with machined face and red or chrome inserts, chrome with chrome inserts
BOLT PATTERNS: 5x114.3, 5x127, 5x135, 5x139.7, 6x114.3, 6x120, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks: Off-Road and Street
WHEEL TYPE: One piece

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WHEEL COMPANY

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OFF-ROAD
USE ONLY

X103

15x8, 16x8, 17x9
Wide 5 : 15x4,
15x6.5, 17x6.5, 17x8



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Kyle LeDuc and X103 Ultra Xtreme Race Wheels.
World Champion Pro-4 Short Course Lucas Oil Off Road Racing Series.
World Champion of Crandon Amsoil Cup



ROB MACCACHREN #21 #11

Rob MacCachren and X103 Ultra Xtreme Race Wheels.
World Champion of the Legendary 1000, with Andy McMillin and Jason Voss.
2ND Place Pro-4 Short Course 2014 Lucas Oil Off Road Racing Series



X100

17x8.5, 20x9



X106

17x8.5 **SAWBLADE**



X106

17x8.5 **SAWBLADE**



X102

15x8, 16x8, 17x8.5, 18x9, 20x9



501

15x8, 16x8, 17x8.5 **LEGEND**



504

16x8, 17x8.5 18x9, 20x9 **LEGACY**



500 UTV

14x6, 14x7, 15x6 **RACE LEGEND**



17x8.5 **500**

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X103 Wide 5 True Beadlock

DIAMETER: 15, 17
FINISHES: Machined with machined beadlock, Satin Black with Satin Black beadlock
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 6x165.1, 8x165.1
APPLICATIONS: Off-road use only wide 5
WHEEL TYPE: One piece



X103 Truck True Beadlock

DIAMETER: 15, 16, 17
FINISHES: Machined with machined beadlock
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 6x165.1, 8x165.1
APPLICATIONS: Off-road use only
WHEEL TYPE: One piece



X106 Sawblade

DIAMETER: 17
FINISHES: Satin Anthracite Grey with Satin Black lip, Satin Black with Satin Black lip
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, SUVs, Jeeps
WHEEL TYPE: One piece



X102 Xtreme

DIAMETER: 15, 16, 17, 18, 20
FINISHES: Satin Black with diamond-cut face and Satin Black lip, Satin Black with Satin Black lip
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, SUVs, Jeeps
WHEEL TYPE: One piece



X100

DIAMETER: 17, 20
FINISHES: Gloss Black with milling
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7
APPLICATIONS: Trucks, SUVs, Jeeps
WHEEL TYPE: One piece



Walker Evans 501 Legend

DIAMETER: 15, 16, 17
FINISHES: Satin Black with Satin Black lip, Satin Black with diamond-cut face
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, SUVs, Jeeps
WHEEL TYPE: One piece



Walker Evans 500 Truck Legend

DIAMETER: 17
FINISHES: Shot-peened with machined center bowl and machined beadlock, Gloss Black with diamond-cut face and machined beadlock
BOLT PATTERNS: 5x114.3, 5x120.65, 5x127, 5x139.7, 6x135, 6x139.7, 6x165.1, 8x165.1, 8x170
APPLICATIONS: Off-road use only
WHEEL TYPE: One piece



Walker Evans 500 UTV Legend

DIAMETER: 14, 15
FINISHES: Gloss Black with machined beadlock, shot-peened with machined center bowl and machined beadlock, Gloss Black with diamond-cut face and machined beadlock
BOLT PATTERNS: 4x115, 4x136, 4x136.5, 4x156
APPLICATIONS: UTV off-road use only
WHEEL TYPE: One piece



Walker Evans 504 Legacy

DIAMETER: 16, 17, 18, 20
FINISHES: Satin Black with diamond-cut face and Satin Black lip, Satin Black with Satin Black lip
BOLT PATTERNS: 5x114.3, 5x127, 5x139.7, 5x150, 6x135, 6x139.7, 8x165.1, 8x170
APPLICATIONS: Trucks, SUVs, Jeeps
WHEEL TYPE: One piece



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ContiForceContact™

CATEGORY: Passenger cars and performance
SIZES: 225-40-18 through 335-30-19
DIRECTIONAL: No
DESCRIPTION: This ultra-responsive tire is engineered for track and street performance. Precise control, confident handling, and outstanding grip.



ContiSportContact™ 5P

CATEGORY: Passenger cars and performance
SIZES: 235-40-18 through 325-35-22
DIRECTIONAL: No
DESCRIPTION: A combination of responsive handling and improved grip, allowing for additional steering response, faster cornering, shorter braking distances, and better wet grip.



ExtremeContact™ DW

CATEGORY: Passenger cars and performance
SIZES: 205-45-16 through 295-25-21
DIRECTIONAL: No
DESCRIPTION: The innovative technology of this ultra-high-performance tire delivers excellent traction and responsive handling. Providing improved ride comfort and better gas mileage.



ExtremeContact™ DWS06

CATEGORY: Passenger cars and performance
SIZES: 195-50-16 through 285-35-22
DIRECTIONAL: No
DESCRIPTION: This ultimate UHP, all-season tire maintains excellent snow traction, while improvements in wet traction, dry handling, and tread life have been made with the new SportPlus Technology.



PureContact™

CATEGORY: Passenger cars and performance
SIZES: 195-65-15 through 245-45-20
DIRECTIONAL: No
DESCRIPTION: A skillful balance of luxury and all-season performance designed for long wear, a comfortable ride, and best-in-class wet braking.



TrueContact™

CATEGORY: Passenger cars and performance
SIZES: 185-65-15 through 235-55-19
DIRECTIONAL: No
DESCRIPTION: Provides touring performance, all-season traction, combined with fuel efficiency, long-wear, and best-in-class wet braking, to make this tire an excellent choice.



ProContact™ TX / ProContact™ GX / ProContact™ RX

CATEGORY: Passenger cars and performance
SIZES: 185-60-15 through 265-35-20
DIRECTIONAL: No
DESCRIPTION: Touring performance all-season tire designed for consumers wanting original-equipment performance.



CrossContact™ LX20

CATEGORY: Light trucks and SUVs
SIZES: 225-70-16 through 285-45-22
DIRECTIONAL: No
DESCRIPTION: This dynamic tire delivers improved fuel economy and treadwear while reducing harmful CO₂ emissions. Providing a comfortable ride, shorter stopping distances on wet ground, and increased traction and grip on snow.



WinterContact™ SI

CATEGORY: Passenger cars and performance
SIZES: 195-65-15 through 245-50-20
DIRECTIONAL: Yes
DESCRIPTION: Focused on snow and ice, this tire includes Continental's patented PolarPlus® Technology for ultimate grip in snow, ice, and wet conditions.

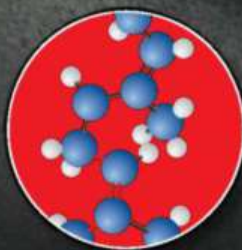
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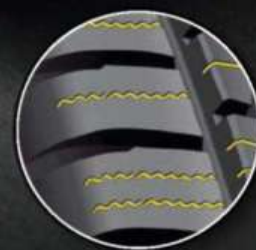
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Yokohama YK-580

APPLICATIONS: Domestic, Import, and European passenger cars
CATEGORY: Passenger cars and performance

DIRECTIONAL: No

DESCRIPTION: The Yokohama YK-580 has the most advanced compounds and tread design to deliver exceptional treadlife, wet and dry handling, and low rolling resistance (LRR) for improved fuel economy. H&V speed-rated tires have a 60,000-mile limited tread wear warranty.



Road Hugger GT ECO

APPLICATIONS: Domestic, Import, and European passenger cars
CATEGORY: Passenger cars and performance

SIZES: 185-65-15, 195-55-15, 195-60-15, 195-65-15, 205-50-16, 205-55-16, 205-60-16, 205-65-16, 205-65-17, 215-50-17, 215-55-17, 215-60-16, 225-50-17, 225-55-16, 225-60-16, 235-55-17

DIRECTIONAL: No

DESCRIPTION: The Road Hugger GT ECO was created for great handling, but it's also environmentally friendly. Special compounds reduce CO₂ emissions and lower rolling resistance for higher fuel efficiency.



Pathfinder Sport SAT

APPLICATIONS: Light trucks and SUVs

CATEGORY: Light trucks and SUVs

SIZES: 225-75-16, 235-70-16, 235-75-15, 235-85-16, 245-65-17, 245-70-16, 245-70-17, 245-75-16, 245-75-17, 255-70-16, 265-65-17, 265-70-16, 265-70-17, 265-70-18, 265-75-16, 275-60-20, 275-65-18, 275-70-18, 285-60-18, 285-70-17, 285-75-16, 30-9-50-15, 31-10-50-15

DIRECTIONAL: No

DESCRIPTION: The Pathfinder Sport S/A/T light truck design combines a smart balance of on-road handling and off-road traction.



Yokohama YK-HTX

APPLICATIONS: Light trucks and SUVs

CATEGORY: Light trucks and SUVs

DIRECTIONAL: No

DESCRIPTION: Today's truck, SUV, and CUV drivers demand a lot from their tires, and the Yokohama YK-HTX delivers with long wear, quiet ride, great all-season traction, and excellent handling. It's backed by the company's 70,000-mile tread wear warranty*. Sizes are available in



Falken Pro G4 A/S

APPLICATIONS: Domestic, Import, and European passenger cars

CATEGORY: Passenger cars and performance

DIRECTIONAL: No

DESCRIPTION: Falken's new Pro G4 all-season performance tire is a great choice for virtually any climate. You can expect longer wear, quieter ride, better traction, sportier handling, and improved fuel economy with this next-generation design. Available in a wide ran



Falken Sincera SN-828

APPLICATIONS: Domestic, Import, and European passenger cars

CATEGORY: Passenger cars and performance

DIRECTIONAL: No

SIZES: 175-65-14, 175-70-13, 175-70-14, 185-65-14, 185-65-15, 185-70-13, 185-70-14, 195-65-14, 195-65-15, 195-70-14, 205-55-16, 205-65-15, 205-70-15, 215-60-16, 215-65-15, 215-65-16, 215-70-15, 225-60-16, 225-70-15

DIRECTIONAL: No

DESCRIPTION: The Falken SN-828 is a T speed rated touring tire designed for a wide range of vehicles in sizes 13 inch to 16 inch. All-season traction, positive handling, and a quiet ride help deliver solid value.



Cooper Discoverer ATP

APPLICATIONS: Light trucks and SUVs

CATEGORY: Light trucks and SUVs

SIZES: 225-75-16, 245-65-17, 245-70-17, 245-75-16, 245-75-17, 255-70-16, 265-60-18, 265-60-20, 265-65-18, 265-70-16, 265-70-17, 265-75-16, 275-55-20, 275-60-20, 275-65-18, 275-65-20, 285-50-20, 285-65-18, 285-70-17, 285-75-16, 31-10-50-15

DIRECTIONAL: No

DESCRIPTION: Designed to provide a great balance of on- and off-road traction.



Cooper Discoverer HTP

APPLICATIONS: Light trucks and SUVs

CATEGORY: Light Trucks and SUVs

SIZES: 215-70-16, 215-85-16, 225-70-16, 235-60-18, 235-65-17, 235-70-16, 235-75-15, 235-80-17, 245-60-18, 245-65-17, 245-70-16, 245-70-17, 245-75-16, 245-75-17, 255-55-18, 255-70-16, 265-60-18, 265-65-17, 265-70-16, 265-70-17, 275-55-20, 275-70-18

DIRECTIONAL: No

DESCRIPTION: The Discoverer HTP is a highway touring tire designed to deliver dependable traction and handling along with great mileage.

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- 30x10-15

Rage STORM

- 26x9-12
- 26x11-12
- 27x9-12
- 27x11-12
- 26x9-14
- 26x11-14
- 27x9-14
- 27x11-14
- 28x10-14

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Rage Storm

APPLICATIONS: ATV and UTV vehicles.
CATEGORY: ATV and UTV
SIZES: 26-11-12, 26-11-14, 26-9-12, 26-9-14, 27-11-12, 27-11-14, 27-9-12, 27-9-14, 28-10-14
DIRECTIONAL: No
DESCRIPTION: Discount Tire prides itself on offering high-quality products at a great value, and the Rage line of ATV/UTV tires are no exception. The durable 8-ply rated Rage Storm is an all-terrain tire that delivers high-caliber control in hardpack, light mud, and snow conditions.



Continental Control Contact Tour A/S

APPLICATIONS: Domestic, import and European passenger cars.
CATEGORY: Passenger cars and performance.
SIZES: 185-60-15, 185-65-14, 185-65-15, 195-60-15, 195-65-15, 205-55-16, 205-60-16, 205-65-15, 215-60-16, 215-60-17, 215-65-15, 215-65-16, 215-65-17, 225-50-17, 225-60-16, 225-60-17, 225-65-16, 225-65-17, 235-65-16, 235-65-17
DIRECTIONAL: No
DESCRIPTION: The Continental ControlContact Tour A/S delivers long wear, reliable safety, and uncompromised performance. It provides exceptional wet traction—especially wet braking. Among the best cost-per-mile values, the tire is covered by a 90,000-mile warranty.



Goodyear Assurance Touring

APPLICATIONS: Domestic, import and European passenger cars.
CATEGORY: Passenger cars and performance.
SIZES: 185-65-15, 205-55-16, 205-60-16, 215-55-16, 215-55-17, 215-60-16, 215-65-16, 215-65-17, 225-55-17, 225-60-16, 225-60-17, 225-65-17, 235-60-16, 235-65-16, 235-65-17
DIRECTIONAL: No
DESCRIPTION: The all-season design of the Goodyear Assurance Touring will appeal to drivers of various vehicles who want an affordably priced tire with great traction, handling, and wear.



Rage Thunder

APPLICATIONS: ATV and UTV vehicles.
CATEGORY: ATV and UTV
SIZES: 26-11-14, 26-9-14, 27-11-14, 27-9-14, 28-10-14, 28-10-15, 30-10-14, 30-10-15
DIRECTIONAL: No
DESCRIPTION: The durable 8-ply rated Rage Thunder is a cross between a mud terrain and all-terrain tire and delivers exceptional performance even in the toughest of terrain. Available in 14-inch and 15-inch wheel sizes, with tire diameters ranging from 26-inch to 30-inch.



Continental Control Contact Sport A/S

APPLICATIONS: Domestic, import and European passenger cars.
CATEGORY: Passenger cars and performance.
DIRECTIONAL: No
DESCRIPTION: The Continental ControlContact Sport AS is a high-value, all-season, ultra-high-performance tire that delivers driving control and superior responsiveness in all conditions—dry, wet, and snow. The exclusive model is also backed by a 50,000-mile warranty.



Goodyear Wrangler ArmorTrac

APPLICATIONS: Light trucks and SUVs.
CATEGORY: Light trucks and SUVs.
SIZES: 225-70-15, 225-75-15, 235-70-16, 235-75-15, 245-65-17, 245-70-16, 245-70-17, 245-75-16, 245-75-17, 255-70-18, 265-60-18, 265-70-16, 265-70-17, 265-75-16, 275-60-20, 275-65-18
DIRECTIONAL: No
DESCRIPTION: Goodyear's Wrangler ArmorTrac is a truck tire designed for on- and off-road toughness and traction. Versatile enough for work and play, this tire provides reliable traction on dry, wet, and icy roads.



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G-MAX™ AS-03

CATEGORY: Passenger cars and performance
SIZES: 195-55-16 through 265-40-22
DIRECTIONAL: Yes
DESCRIPTION: Engineered to provide optimum performance for sport performance vehicles in any season. The ultra-high-performance tire offers dry performance, wet traction, snow grip, and extremely long wear.



AxiMAX™ RT¹³

CATEGORY: Passenger cars and performance
SIZES: 175-70-13 through 245-45-18
DIRECTIONAL: No
DESCRIPTION: An all-season, touring tire designed for a quiet, comfortable ride in combination with all-season traction and enhanced with even treadwear and extended treadlife.



Grabber™ HTS

CATEGORY: Light trucks and SUVs
SIZES: 225-70-15 through 285-45-22
DIRECTIONAL: No
DESCRIPTION: A blend of durability, comfort, and performance. A premium all-season tire with advanced technology providing superior handling and comfort while improving fuel economy.



Grabber™ AT²

CATEGORY: Light trucks and SUVs
SIZES: 225-75-15 through 305-50-20
DIRECTIONAL: No
DESCRIPTION: Provides outstanding traction and confidence no matter the road surface. An aggressive, self-cleaning tread pattern enhances off-road and wet traction capabilities while offering a quiet ride on the highway.



Grabber™ (Red Letters)

CATEGORY: Light trucks and SUVs
SIZES: 265-75-16 through 375-50-22
DIRECTIONAL: No
DESCRIPTION: A balance of off-road capabilities and on-road manners. This tire delivers aggressive off-road traction along with stability and quiet on paved roads.



Grabber™ UHP

CATEGORY: Light trucks and SUVs
SIZES: 255-65-16 through 305-35-24
DIRECTIONAL: Yes
DESCRIPTION: Emphasis on traction, handling, and control. The advanced sound-reduction technology and continuously varying groove angles work together to reduce noise and deliver an impressively quiet ride.



AxiMAX™ Arctic

CATEGORY: Passenger cars and performance
SIZES: 175-70-13 through 285-70-17
DIRECTIONAL: Yes
DESCRIPTION: A combination of unique grooves and sipes with a modern compound offers high performance at low temperatures. This winter passenger tire performs well in winter conditions ranging from rain to sleet and snow.



Grabber™ Arctic LT

CATEGORY: Light trucks and SUVs
SIZES: 225-75-16 through 275-65-20
DIRECTIONAL: No
DESCRIPTION: A shuddable winter tire, this tire offers outstanding low-temperature traction in snow, ice, and wet conditions. The all-weather light truck tread compound is a strong, cut, and chip-resistant compound.

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Proxes T1 Sport

APPLICATIONS: Ultra-high performance summer tire.
Popular fits: BMW 1 Series, BMW Z4, Ford Mustang GT, Infiniti G37, Nissan 370Z.
CATEGORY: Passenger cars and performance
SIZES: 17" to 20", 205-325mm
DIRECTIONAL: No
DESCRIPTION: The Proxes T1 Sport delivers increased control and precision for true balance in both wet and dry handling. State-of-the-art design and construction provide the perfect mix of high-speed stability and cornering power, precise steering response, and quick braking.



Proxes TIR

APPLICATIONS: Ultra-high performance summer tire.
Popular fits: Audi A7, Cadillac CTS-V, Chevrolet Corvette, Jaguar XKR, Lexus GS 450.
CATEGORY: Passenger cars and performance
SIZES: 15" to 22", 185-345mm
DIRECTIONAL: Yes
DESCRIPTION: The Proxes TIR is an ultra-high performance summer tire designed for sport sedans and coupes. A refined tread design and construction offer improved dry and wet handling as well as performance.



Proxes RIR

APPLICATIONS: Extreme Performance summer tire.
Popular fits: BMW 3 Series, Honda S2000, Porsche Boxster, Subaru WRX STI, Mitsubishi Lancer Evolution.
CATEGORY: Passenger cars and performance
SIZES: 15" to 18", 195-275mm
DIRECTIONAL: Yes
DESCRIPTION: The Proxes RIR helps you drive hard through the corners and quickly accelerate in the straightaways. Features include an aggressive, arrowhead tread design, extra-wide footprint, high-grip compound, and autocross-inspired casing design.



Proxes 4 Plus

APPLICATIONS: Ultra-high performance all-season tire.
Popular fits: Chevrolet Camaro, Dodge Challenger, Hyundai Genesis Coupe, Nissan 370Z, Ford Mustang.
CATEGORY: Passenger cars and performance
SIZES: 16" to 20", 195-315mm
DIRECTIONAL: No
DESCRIPTION: This is the very best ultra-high performance all-season tire we've ever made. Experience better snow braking and up to 47 percent longer tread life than the leading competitor, plus a quieter ride over the life of the tire. The Proxes 4 Plus is perfect for high-powered sports cars.



Extensa HP

APPLICATIONS: High-performance all-season tire.
Popular fits: Ford Focus, Infiniti G35, Scion iC, Subaru Impreza WRX, Mitsubishi Eclipse, Mitsubishi Lancer.
CATEGORY: Passenger cars and performance
SIZES: 15"-22", 185-275mm
DIRECTIONAL: Yes
DESCRIPTION: This high-performance all-season tire offers the quality and styling you expect from Toyo Tires at an unexpected price. Designed with value in mind, the Extensa HP delivers all-season handling, increased mileage, and a comfortable ride.



Proxes ST II

APPLICATIONS: Street/sport truck all-season tire.
Popular fits: Cadillac Escalade, Dodge Durango, Lexus LX, Mercedes-Benz ML, Range Rover.
CATEGORY: Light trucks and SUVs
SIZES: 16" to 24", 225-315mm
DIRECTIONAL: Yes
DESCRIPTION: The Proxes ST II delivers the perfect balance of style and performance for sport trucks, SUVs, and CUVs. Superior handling, confident all-season performance, consistent wear, and a smooth, quiet ride are wrapped up inside an attractive tread design.



Open Country R/T

APPLICATIONS: On/off-road rugged terrain tire. Popular fits: Chevrolet Silverado, Ram Series, Ford F-Series, Jeep Wrangler, Toyota Tundra.
CATEGORY: Light trucks and SUVs
SIZES: 16"-22", 265-285mm, 33x12.50-13.50
DIRECTIONAL: No
DESCRIPTION: Off-road performance meets on-road comfort with the new Open Country R/T. Built rugged for any terrain, this 100 percent American-made tire offers excellent off-road traction, durable construction, and aggressive styling. It has the ability to tackle dirt and sand.



Open Country A/T II

APPLICATIONS: On/off-road all-terrain tire. Popular fits: Chevrolet Silverado, Ram Series, Ford F-Series, Jeep Wrangler, Toyota Tundra.
CATEGORY: Light trucks and SUVs
SIZES: 15"-22", 235-325mm, 30x9.50-35x12.50
DIRECTIONAL: No
DESCRIPTION: These versatile all-terrain tires offer over 40 percent more tread life than the leading competitors, a blatantly aggressive tread design, and a quiet ride. They also come with an industry-leading 65,000-mile treadwear warranty and our No Regrets® 45-day, 500-mile trial offer.



Open Country M/T

APPLICATIONS: Off-road maximum traction tire. Popular fits: Chevrolet Silverado, Ram Series, Ford F-Series, Jeep Wrangler, Toyota Tundra.
CATEGORY: Light trucks and SUVs
SIZES: 15"-24", 235-385mm, 31x10.50-40x15.50
DIRECTIONAL: No
DESCRIPTION: Designed for enthusiasts who require extra ground clearance, load-carrying capacity, and off-road capability with great on-road performance, this maximum traction tire is known for its long wear, low noise, and aggressive tread pattern.

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Wheel & tire theft is increasing across the country. National and local news media have aired many stories about these thefts and how they may occur wherever you park your car, even in your own driveway. Contacting your insurance company isn't the only inconvenience after having your wheels & tires stolen. Being stranded, vehicle damage, loss of use and paying high insurance deductibles can be a huge headache.



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Cone Seat Wheel Lock

PRODUCT INFO: McGard's easy-to-use one-piece wheel lock functions like a regular lug nut, but requires a special key tool for installation and removal.
SPECIFIC APPLICATIONS: Available to fit cars, trucks, and SUVs in the following thread sizes: 7/16-20, 1/2-20, 9/16-18, M12 x 1.25, M12 x 1.5, M12 x 1.75, M14 x 1.5, and M14 x 2.0



Bulge/Regular Lug Nuts

PRODUCT INFO: McGard Tough Nuts are designed to last for life. No chipping, peeling, or rusting—EVER.
SPECIFIC APPLICATIONS: Available to fit: 7/16-20, 1/2-20, 9/16-18, M12 x 1.25, M12 x 1.5, M12 x 1.75, M14 x 1.5, and M14 x 2.0



Under the Hub Cap Locks (UHC)

PRODUCT INFO: For use when height clearance is a problem. Perfect for use under wheel covers, hubcaps, and center caps.
SPECIFIC APPLICATIONS: Available to fit: 7/16-20, 1/2-20, 9/16-18, M12 x 1.25, M12 x 1.5, M12 x 1.75, 14 X 1.5, and M14 X 2.0



SplineDrive® Lug Nuts

PRODUCT INFO: The original patented design, engineered to fit small-diameter recesses in aluminum tuner-style wheels. SplineDrive® Lug Nuts offer a closed-end design, maximum gripping power, more stud engagement, and a greater seating surface than socket-style lug nuts. In addition, they are 30 percent lighter. Available in bright chrome, gold, black, and anodized aluminum trim in red and blue.
SPECIFIC APPLICATIONS: Thread sizes: 1/2-20, M12 x 1.25, M12 x 1.5, and M14 x 1.5. Truck and SUV SplineDrive Lug Nuts available in M14 x 1.5



Cone Seat Tuner Wheel Lock

PRODUCT INFO: A no-compromise design engineered to fit into close tolerance lug hole recesses in aluminum tuner-style wheels. Weight matched to our SplineDrive Lug Nuts
SPECIFIC APPLICATIONS: Thread sizes: 1/2-20, M12 x 1.25, M12 x 1.5, and M14 x 1.5



Installation Kits

PRODUCT INFO: Everything you need to install your new wheels in one convenient package! We've combined the best wheel and tire theft protection available with the highest quality fully machined chrome-plated lug nuts. Available with Tough Nut® hex lug nuts or SplineDrive® tuner lug nuts. Most kits include wheel locks and key tool, ID card & storage pouch. Jeep Wrangler 23-piece Installation Kits also available, which include five Wheel Locks (four locks for road wheels and one lock for spare), 18 Lug Nuts (16 nuts for road wheels and 2 nuts for spare), matching key, key pouch, and ID card



Lock Bolts

PRODUCT INFO: Locks to fit European cars are available in many lengths for cone seat, cone seat tuner-style, and radius seat
SPECIFIC APPLICATIONS: Available to fit: M12 x 1.25, M12 x 1.5, M12 x 1.75, M14 x 1.5, and M14 x 1.25



Lug Bolts

PRODUCT INFO: Two-piece design provides optimum safety and performance. Precision manufacturing meets or exceeds OEM requirements. Beautiful black or bright chrome finish enhances the look of any wheel. The triple-nickel chrome plating is guaranteed for life not to chip, peel, or rust. Available in 5-lug Wheel Installation Kits for both Cone and Radius seat.
SPECIFIC APPLICATIONS: Cone Seat Lug Bolts are available in thread sizes: M12 x 1.25, M12 x 1.5, M14 x 1.5, and M14 x 1.25. Radius Seat Lug Bolts are available to fit M14 x 1.5



Jeep Wrangler Accessories

PRODUCT INFO: Jeep Wrangler 5-Lock Sets available in chrome and black, regular and tuner style. Wheel and tire theft protection for your road wheels and spare. Contains five locks (four locks for the road wheels and one lock for the spare) with one matching key for all five locks. Also available are Jeep Door Locks, for Wranglers with removable doors. Simply replace the lower hinge nuts with door lock nuts to protect your Jeep doors from theft.
SPECIFIC APPLICATIONS: Lug Nuts are available in 1/2-20 thread with 3/4-inch or 9/16-inch hex

tireconstruction

Understanding the essential components of a tire.

To better understand the essential components of a tire we've put together this diagram to give you a brief study of the structure, location, and purpose of each specific component on a tire.

1 SHOULDER

The shoulder on each side of the tread is designed to protect the belt and carcass of the tire and to dissipate heat generated during running to the atmosphere. There are two basic kinds of shoulder shapes: rounded and square.

2 SIDEWALL

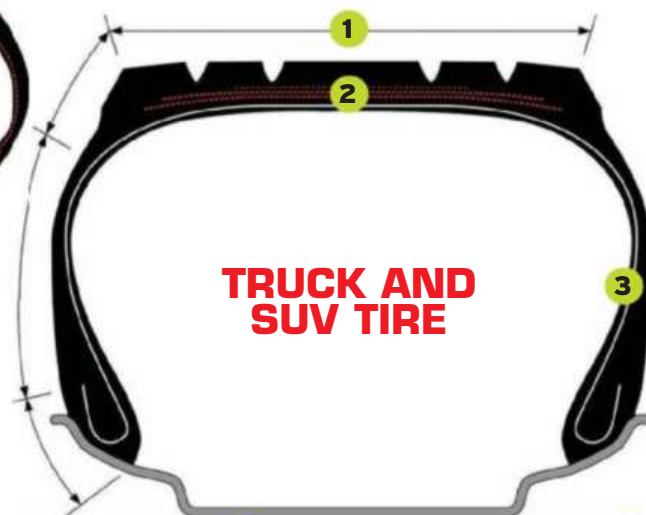
The sidewall on each side of the tire is the section that deflects most during use. The rubber coating serves to protect the carcass and is the area where all of the notations of tire size, brand name, manufacturer, and so on, are located.

3 BEAD

The bead area supports the extremities of the carcass on each side of the tire. This is the part of the tire that anchors the tire to the wheel. Some tires also provide a lip protector on the bead which aids it in preventing the scuffing of the lips on your custom wheel.

4 INNER LINER

The inner liner is a layer of special rubber attached to the carcass that has high resistance to air migration.



1 TREAD

The tread is the part of a tire that makes contact with the road surface. The tread consists of a layer of rubber, which is compounded to suit the specific application and purpose of the tire. The tire and the thickness serve to protect the belt and carcass, and depending on application tread pattern, may be tailored for several purposes including improved water drainage and better traction, as well as increased braking and cornering characteristics.

2 BELT

The belt's reinforcement layer extends around the outer circumference of the carcass under the tread. It acts like an iron hoop and is there to improve the stiffness of the tread area.

3 CARCASS

The carcass is the load-bearing framework that forms the body of the tire. It's composed of rubber coated fabric or steel cords laid in a radial direction. The carcass contains the inflation pressure aiding in supporting the load and absorbing impact.

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